# THE GARDEN JOURNAL

## OF THE NEW YORK BOTANICAL GARDEN

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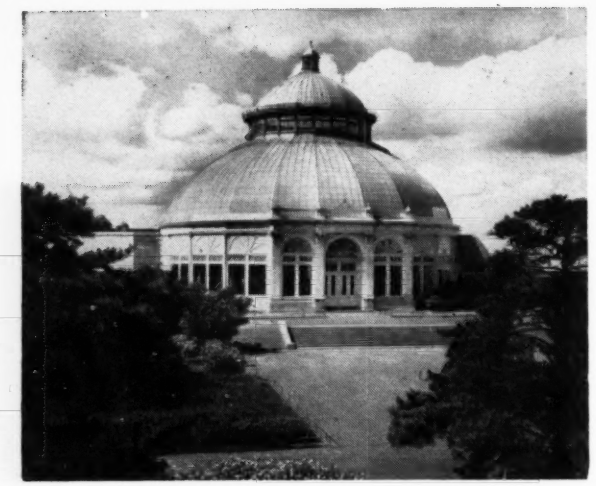

**Exhibits in the Museum and Administration Building**—"Gazebos, Grottos, and Garden Ornaments" and "Putting the Garden to Sleep"—will continue until the end of January.

**Special Shows in the Conservatory**
Chrysanthemum Show until December 4.
Christmas Show from December 16 through fore part of January.


**THE GARDEN JOURNAL**
**of The New York Botanical Garden**

DOROTHY EBEL HANSELL
*Editor*


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*Autumn is not a sad season — it is not the end but the brilliant climax of the garden drama. Thereafter, the actors retire from the center of the stage to rehearse their parts quietly for the next year's performance. Flowers and plants are blackened by the touch of frost, but life flows on beneath the surface of the soil. Seed pods ripen and burst open, and precious seeds drop to the ground bearing life within themselves. Every leaf that falls contributes something to the future enrichment of the earth, even though it be but an infinitesimal part of that vital leafmold.*

*I've always cherished what an artist once said to me — he was drawing his brush across the canvas on which he was painting a fall landscape — "Fall, sad? Never! Spring is sad — it is young, it is tender. But fall is alive, it is rich and glowing in abundant fruition."*

# Accent on Color Harmony

**By Mary Deputy Cattell**

COLOR IS AS IMPORTANT outside of the house as it is inside. Careful study of outdoor color in trees, shrubs, vines, and flowers can be most rewarding, particularly on the small property or in the small garden; skillful use can increase or decrease apparent size or distance; accent desirable features, or minimize undesirable ones; make flower arrangements outdoors.

The most important color of all is green. It is, of course, the most prevalent one at most seasons of the year and has endless variations. In general, greens range from the dark, almost black-green of many broad-leaved evergreens like rhododendron, mountain-laurel, Japanese holly, through the medium green of most of the deciduous shrubs, to the gray-green of Russian olives, shadbush, blue-leaf honeysuckle, and styrax. The dark greens are particularly valuable to accentuate depths in bays of a shrub border. Rhododendron or laurel makes the bay seem deeper than it actually is. The gray-greens at the opposite end of the color value are more conspicuous and, therefore, are better for accent on points, or occasionally at the end of a vista to make distance seem greater by an illusion of misty horizon.

The bulk of shrub planting should be of medium greens, particularly on the small property, with the very dark or the very light yellow-green or gray-green used sparingly and for accent. If there is constant change of color value, the shrub border is likely to look spotty and restless. On the other hand, if everything is exactly the same green or nearly the same, it is likely to be monotonous. For example, a planting made up entirely of dark green broad-leaved evergreens has a somber quality with little play of light or shadow. Some deciduous azaleas or bronzy andromedas added to it lighten the whole planting and make it much more attractive. Since most woody plants are in flower only two or three weeks of the year, and in leaf seven to twelve months, the appreciation of and skill in combining leaf color is the foundation of everything else on the place.

Nevertheless, most of us think of outdoor color in terms of flowers. Many newcomers to the garden world have not studied the difference in outdoor and indoor color and the effect of sun and shade on certain colors. There are very few plants whose flower is of true primary color and the gradations in pinks, yellows, blues, and reds in sun and shade make either interesting combinations or disturbing color clashes in the garden picture. In composing outdoor pictures, the first thing to take into account is the predominant color of the general surroundings at the time of bloom. If on your own or in the neighbor's property exists a large Norway or sugar maple, its yellow-green flower makes excellent combinations with forsythia or cornelian cherry and yellow daffodils. If, on the other hand, the tree is a red or swamp maple, the yellows make entirely too garish a picture. For the same season, star magnolia, white daffodils, and red-flowering quince are much more harmonious and effective. A little later in the season, the strong rose-pinks of redbud or 'Paul's Scarlet' thorns, or the brilliance of pink dogwood dominate the picture and everything else of their season bloom must be keyed to them. In choosing plants for the small property, these strong colors should be used rather sparingly, particularly near a flower garden. If they are part of the surroundings of a garden, the spring garden, ever after, will have to be of essentially the same color scheme. Most of us want change in tulip and iris color after a few years and would rather not be committed for the life of the place never to have salmon-pink or light yellow tulips, because we have redbud or 'Paul's Scarlet' thorn nearby, and never to have rose-pink tulips or pink iris if we have a pink dogwood.

If a flower border or flower garden is to be added later to the color picture, it is wiser to use shrubs and trees of less dominant colors. White dogwoods, lilacs, pale pink beautybush, or white and pale pink varieties of weigelia, white hawthorns or pale pink English ones will allow much more latitude in flower combinations and do away with any possibility of a clash in color as our tastes change.

Much of the color beauty of the small place should be gained by using shrubs and trees in combinations in just the same way that we use pink zinnias with blue salvia or white lilies with blue delphiniums. One way of learning to make outdoor combinations of color is to visualize them in terms of bouquets inside the house. For example,

(Continued on page 184)

# THE BISHOP'S GARDEN

## At the Cathedral of St. Peter and St. Paul Washington, D. C.

**By Nannette M. Strayer**

*"If you'd have a mind at Peace,*
*A heart that cannot harden*
*Go find a door that opens wide*
*Upon a beautiful garden."*

THE DOOR THROUGH the ancient twelfth century arch of the Bishop's Garden is always open wide to all who may care to enter. Drink in its beauty, stay as long as you like. The Bishop welcomes you and anyone who cares to linger and find peace and rest within its cloistered walls.

As we pass under the Norman arch, brought over from France, centuries old, taken down stone by stone, numbered and reassembled, we step from a busy, noisy thoroughfare into an old-time atmosphere. Can it be possible that this garden was not always here? Its ancient boxwood, its tall Irish yews, its ivy-covered walls, its worn flagstone winding paths, surely it has been here for ages. No, in reality the garden was started by All Hallows Guild a little over a quarter century ago. In 1926 the Guild had designated a two-year plan to complete the garden by the time the General Convention would convene in Washington, in the autumn of 1928. Wide lawns, flower borders, herb garden, rose garden, and pool were all ready on the day of the convention. Within that brief span of two years, beauty somehow had slipped in unawares, the beauty of age. Ancient stone, mellowed brick, rough-hewn lumber, the ancient carved bas-reliefs, the little hortulus, each a complement to this Garden of the Ages.

After one enters the Bishop's Garden, a curving path between irregular masses of boxwood leads to a Norman Court. Here we pass under another great arch and enter the Court, of the same period as the architecture of the arch, Romanseque twelfth century.

The stones of which this little Court are constructed were gathered from many sources, all of them cut by hand over one hundred and seventy-five years ago, when first taken from George Washington's quarry. Door steps, old wells, old walls, old ice houses, ruined chimneys, the floor of an old spring house, the tow path of an historic canal, the worn surfaces of these stones, their charm of color, the green of moss, the greys and browns of weathered texture combine well with the ancient stones of William the Conqueror's time. If these stones could but speak, they would share events that have helped to shape nations.

On the wall is inserted an ancient bas-relief over five hundred years old. The central panel, the crucifixion, has on the left the figure of the Blessed Virgin, while on the right is St. John with a little book in his hand. The ivy framing this, architectural in its form of growth, was brought years ago from Canterbury Cathedral. As one turns to the right there is the sound of running water and the softening and fragrance of growing things; not assertive or important in themselves, just lavender, Scotch broom, and ivy, and sometimes a bit of color added with a pot of old-fashioned fuchsia.

Two cedars of Lebanon were brought from the Holy Land and planted by the late Dean Bratenahl. They flank the archway from which can be seen a matchless view, far beyond, of the city and the distant Potomac River. A couple of seats entice us to rest within the shadows of this secluded spot.

Near the cedars of Lebanon is planted one of the finest specimens of boxwood

**Twelfth century Christian wheel, used as a roadside sign to show Christians the location of a monastery—this rare survival of the early days of Christian faith in France was given to the Bishop's Garden by George Grey Barnard. Each rose plant, shrub and tree represents a gift or offering and is recorded in the Garden's "Book of Remembrance."**

Shadow House in the Bishop's Garden and old capital from a monastery near Rheims Cathedral, France, used as a sundial.

—a memorial to the late Bishop Harding. It was obtained from a farm at Damascus, Maryland, and rescued from an unappreciative farmer who wanted it removed in order to build a pigsty. A famous architect said, "A single piece of old boxwood can make as definite a contribution to a garden as an old master in furnishing a room." This boxwood is indeed worthy the setting of a great cathedral. It is considered by an expert, who offered two thousand dollars for its purchase soon after the planting here, to be the finest piece of *Buxus suffruticosa* ever seen. It must have been brought over from England by the original settlers of Maryland.

The entrance has many surprises other than the Norman Court. To the left, if we follow the turn with its low flight of steps, is the boxwood garden, enclosing hortulus, a little garden within a garden. The first planting in the Bishop's Garden was made here.

Much forethought and study went into the planting of this "Garden Enclosed"—study of old-world gardens, old illuminated manuscripts and missals, rare herbals and worn tapestries, old plant lists from the fourteenth century downward. The search was rewarding, for there was found a copy of Charlemagne's own list when he ordered his imperial garden, and another of Walafrid Strabo, monk, scholar, gardener, who wrote of the joy of his garden in a tiny volume, *Hortulus—The Little Garden*. From these two lists were selected the herbs for this cloistered spot.

Here we catch the spirit and peace of a medieval garden and see how beautiful an old garden can be, how charming, tranquil, and restful. It is a small enclosure, full of spicy fragrance: rosemary, herb of remembrance, steeped in mystic legends of Mary and the Christ Child; Our Lady's bedstraw, said to be one of the herbs that lined the Holy Manger, marjoram, thyme, lovage, ambrosia, sweet woodruff, gilly flowers, hyssop, sage, and all the old-time plants found in a medieval garden. There are tall white lilies and a few roses whose names are almost forgotten, but the most fragrant of all.

Every herb garden should have a focal point. Here in the center is an ancient font, one thousand years old. It came from the Abbey of St. Julie, in Aisne, France. Beautiful in its simplicity of carving and proportion, it stood for several centuries out-of-doors in a cloister garden. Its primitive carving and measurement lift it to a sphere of spiritual beauty. It fits perfectly to the scale of the little garden.

> "Reverence: One cannot help but feel it deeply, before fragments of an age which out of massive stone, with the crudest of tools, could carve objects that will survive and still speak to us with a singular beauty, after the passing of a thousand years."

The original planting surrounding the font was a circle of boxwood taken from Hayfield Manor, Fairfax County, Virginia, built by George Washington in 1761. Now about two hundred years old, it overshadowed the little garden and has been removed. In its place is planted dwarf alpine ever-bearing strawberries, and within the circle many varieties of *Thymus serpyllum*.

The path from hortulus leads to another part of the garden, and we come in full view of the wheel or wayside cross, so ancient its age has never been determined. It stands at the far end of a green lawn, which is surrounded by a coping, edged with compact little plants of golden lemon thyme.

This round head or wheel cross is one of those rare survivals of early Christian faith in France. It was the gift of George Grey Barnard, sculptor, of New York and "Cloister" fame. These crosses were often erected in ancient times at the crossroads as boundary markers or as guides to a church or shrine, and welcomed by pilgrims for a moment's rest or devotion. It has the IHS, the sacred monogram in the cen-

Flagstone walk leading from the Norman court—azaleas and English hawthorn in bloom with cedar of Lebanon in background.

ter, and definitely marks the garden's dedication. Around this is a Latin inscription taken from one of the Psalms, "Our soul is humbled even unto the dust." The spirit of the cross is felt by all who enter within its fragrant stillness and shadows. It stands out as a most striking and fitting monument to the great cathedral towering above.

Between the cracks of its worn historic stones, which form the base, have been planted such stone-loving plants as creeping thyme, spicy pinks, and *Phlox divaricata,* snow-white with tones of soft blues and gray, and the fragrance of old gilly flowers. All these growing things are a memorial given by Mrs. R. Barrett Browning, daughter-in-law of the poet.

In the rose garden enclosed within boxwood are living memorials, made possible by hundreds of small, as well as large gifts. Here are beautiful varieties of roses that can be traced back many centuries: Damask, Provence, York, Lancaster, Old Pink Moss, and Cabbage. There are modern ones too, hybrid teas and familiar 'Radiance.' Then there are the taller and picturesque growth of some of the briar and bush roses. These form attractive backgrounds in the garden.

An old-time capital of the thirteenth century, found in a ruined monastery near Rheims Cathedral, now serves as a garden sundial. Another capital from the ruined abbey where Abelard died and of the same period is used as a bird bath.

The great masses of old boxwood surrounding the garden came from "Ellerslie," a ruined manor house at Little Washington, Virginia, built in 1814 by James Jett. The founder of this "Seat of Quality" was a descendant of Lord Calvert. Many were after this finest of century-old box. It was shipped to Mt. St. Albans in eleven carloads by freight. Today each piece is intensely individual, molded by no human hand. About seven hundred feet of boxwood were transplanted from "Ellerslie." It would be difficult to say how many hundred feet more have been acquired since then.

I wish I had the power to instill in those who are not brought up with boxwood, appreciation of its great beauty and rare charm, its density of leafage, its pungent fragrance, especially after a shower, its beautiful informality and picturesque growth. One has to live with boxwood to realize its value. Our colonists bequeathed a great legacy to us when they landscaped "Monticello," "Strafford," "Wakefield," "Mt. Vernon," "Morven Park," and "Gunston Hall." What would they be without their boxwood?

Here in the Bishop's Garden it is surprising, amazing, almost bewildering, to find more and more of it. You never lose sight of it or the scent of it. Wholly encompassed by box, you fall under the spell of its great beauty.

The old English perennial border, under the high retaining wall, is called the "Memory Garden" and is a succession of bloom from early spring to late fall. Here are perennials our grandmothers knew and loved: primroses, delphiniums, Michaelmas daisies, peonies, and many others. During the weeks that iris are in bloom there are lovely shades of lavender, blue, mauve, purple, gold, bronze, and ivory — the *Nepeta Mussinii,* blue flax, Madonna lilies, and meadow rue. Here is color and fragrance, with the relief of shadow and density of green from ancient box.

The high wall of ancient moss-covered stones is softened by the delicate beauty of such roses as 'Gloire de Dijon,' 'Gardenia,' 'Mystery,' and 'Fascination,' set off by the dark green of ivy. It was built from stones, like the Norman Court, found in old wells, door steps, old ice houses. Their weathered texture give the wall the appearance of great age.

Inserted in the wall at intervals are fifteenth century bas-reliefs. One can be recognized as St. Catherine with her wheel, the symbol of martydom. The others are not easy to identify.

At the end of this border is heard the music of running water. Added to the beauty of this Old World garden is a pool in the shape of a primitive cross, while another type of cross is faintly indicated in the pavement of old flagstone. From a hidden source above, through enchanting bits of old box, a little stream finds its way over old worn stones to the pool. Dusky carp enjoy its cool waters. A garden seat invites us to stop and rest and enjoy the depth of light, shadow, and reflection in this quiet corner.

We retrace our steps over worn flagstone walks. These stones were from George Washington's Aquia Creek Quarry, cut by hand over one hundred and seventy-five years ago. We come to the "Shadow House," a medieval name for a garden house. It is built of stone from "Red Top," an old house of President Cleveland. The framed doorway and window openings are of handhewn oak; the floor a quaint pattern of old pie-shaped brick. To the left is an old fig tree from "Abingdon," birthplace of Nellie Custis. From the "Shadow House" steps lead to the "Yew Walk." These steps and some of the old brick used in the walks also came from "Abingdon." Virginia seems to have given much from her historic estates to this little garden, for "Mt. Vernon," too, has given a rare weeping boxwood and ivy. There is nothing so majestic as a walk lined with yews, Gothic in line and pinnacles. Some remarkable specimens of Irish yew, *Taxus baccata fastigiata*, line each side of the walk. Some of the stones forming the walk came from "Carloss," a beautiful home in Alexandria, formerly owned by the Alexander family.

Six shrubs lighten the long length of the walk. They were the offering of Miss Edith Notman of New York; she said she would like them to be associated "With six little girls that I love, can you find something that looks just like them?" So the fragile beauty and youth of *Viburnum Carlesi* and that lovely shrub with the fearsome name of *Enkianthus* are the youth and grace that were chosen and have, as a background for their beauty, enclosing walls of box and shafts of yew.

At the far end of the walk and back of the wheel cross is a beautifully wrought-iron gate opening on to the "Pilgrim Steps." On top is an iron cross and bar with the inscription, "They shall enter unto Peace that enter in at these gates."

To Florence Bratenahl, the designer, and to Charles H. Merryman, the landscape contractor, is owed a deep debt of gratitude for the perfection of this garden, for it was by their artistic, diligent, and painstaking efforts that it was born and developed. Now volunteers from All Hallows Guild keep up its beauty and tradition.

The garden is opened every day of the year and is visited by thousands from all over the world. I doubt if there is another just like it anywhere. So much of it belongs to yesterday, a garden of memories. So much of it belongs to today, for it may be shared by all. So much of it belongs to tomorrow, for the generations to come.

It is a small intimate garden and thus it is ever meant to be. Here is a quiet the outer world can not give. Here is a repose for body and soul, the restoring power of a quiet cloistered garden, and here is peace and fragrant stillness. This garden has much to give you and in your heart may you carry it all away.

*"Here some calm Presence takes me by the hand and all my heart is lifted."*

**The perennial border in the Bishop's Garden, Washington Cathedral, Washington, D. C.**

# GARDEN CONSTRUCTION

## *Some Notes on Retaining Walls, Stone Steps, Outdoor Fireplace*

*By* A. C. Pfander

THE ARTIST WHO PAINTS a picture in the great outdoors has a distinct advantage over those of us who are starting a garden. He can select his subject — we have to create our garden and very often we are confronted with serious handicaps.

We can't build our garden just anywhere—we have our site and we must make the most of it, emphasizing its good points, making the best of unfavorable grades, concealing ugly buildings within vision.

Suppose, for example, we are faced with the problem of a sharply sloping lawn broken at intervals by terraces which burn severely in hot, dry spells. We can, of course, improve the condition of the soil by the addition of humus and fertilizers so that when we water, the water will penetrate instead of running off the surface. And this will, to some measure, alleviate the burned-up appearance that is likely to occur during trying weather conditions in midsummer. However, we still have the not too easy job of mowing steep slopes, but this job can be made less strenuous if we build retaining walls and break the sharp slope into several level terraces.

The building of a retaining wall is not necessarily difficult if the proper material is chosen. Flat stones are the easiest for the amateur to handle. Random stones and boulders require skill and should be handled by experienced stone masons. This is especially true if the wall is to be built of stone that matches the stone used in the dwelling or other features of the property. Through architectural design and good garden practices startlingly beautiful effects can be achieved in a planted retaining wall.

A dry wall should never be built perpendicularly, because frost action will cause damage sooner or later, and maintenance of a perpendicular retaining wall is a headache — a constant source of expense and disappointment. A planted dry wall should always lean slightly toward the bank so that rain water will seep to the roots of the plants.

If proper care is taken in selecting plants, the appearance of retaining walls is pleasing even in the dead of winter. Plants with persistent foliage are attractive at that time of year, and in spring and summer the mass color effects are as fine as those in a rock garden. For a really successful wall, attention must be paid to the soil. A good mixture consists of one fourth screened topsoil, one fourth humus or leafmold, one fourth sand, and one fourth cow manure with a little bonemeal. The layer of soil between the stones should be at least three quarters of an inch, and pockets of soil should be provided for plants of vigorous growth. Contrary to general belief, plants usually last many years in a well-constructed wall with a minimum of care beyond watering and shearing, and the cost of maintenance is low.

Flat stone steps are an attractive feature on a sloping lawn or in a garden built on a slope. While the single stone step has unquestioned merit as to appearance and simplicity of construction, the step which is built like a small wall, made up of irregular sizes of flat stones and topped with larger stones in a flag-walk pattern, certainly is much more effective. To build steps of this type securely, it is necessary to give each step a foundation of cinders and sand mixed — or of gravel. If these steps were to be laid directly on soil, the accumulation of water and freezing in winter would be sure to ruin your handiwork.

A six-inch foundation, well tamped and leveled off perfectly, makes a good base. Starting from both end stakes and working to the center, you put in your first layer of flags. On the second layer, you must lay the flags so that every joint of the previous layer is covered and so on through the entire step. In other words: all joints running up and down in the step should be interrupted at regular intervals and should never form a line in the face of the step. This is important not only from the viewpoint of beauty, but also for stability.

For the top of the step it is advisable to select good-sized stones, to avoid unnecessary joints; joints should never be wider than three-quarters of an inch and, if possible, avoided entirely in the center of the step.

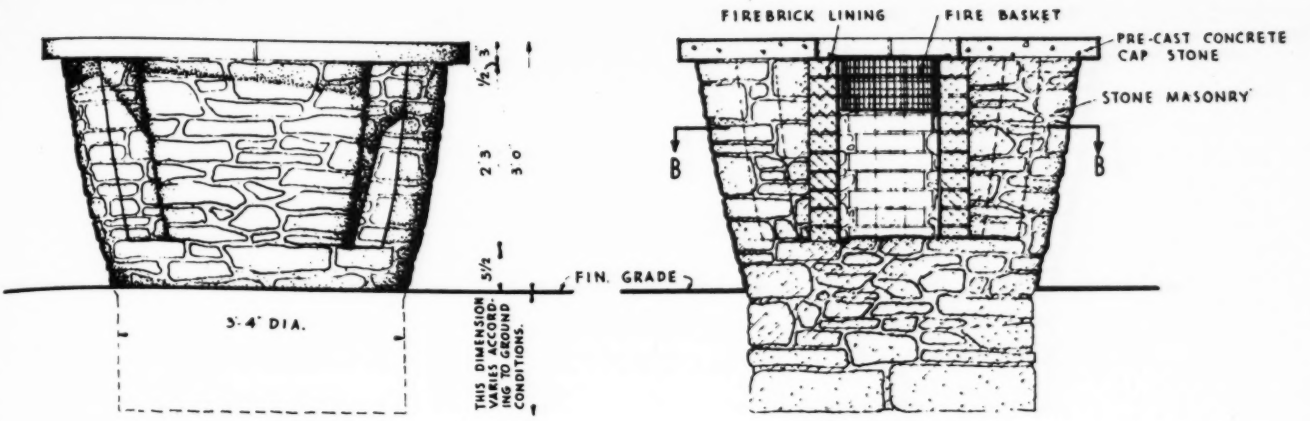
Screened soil should be used, if the steps are to be laid in soil, and it must be packed tight; otherwise, shifting and sagging will make the steps insecure.

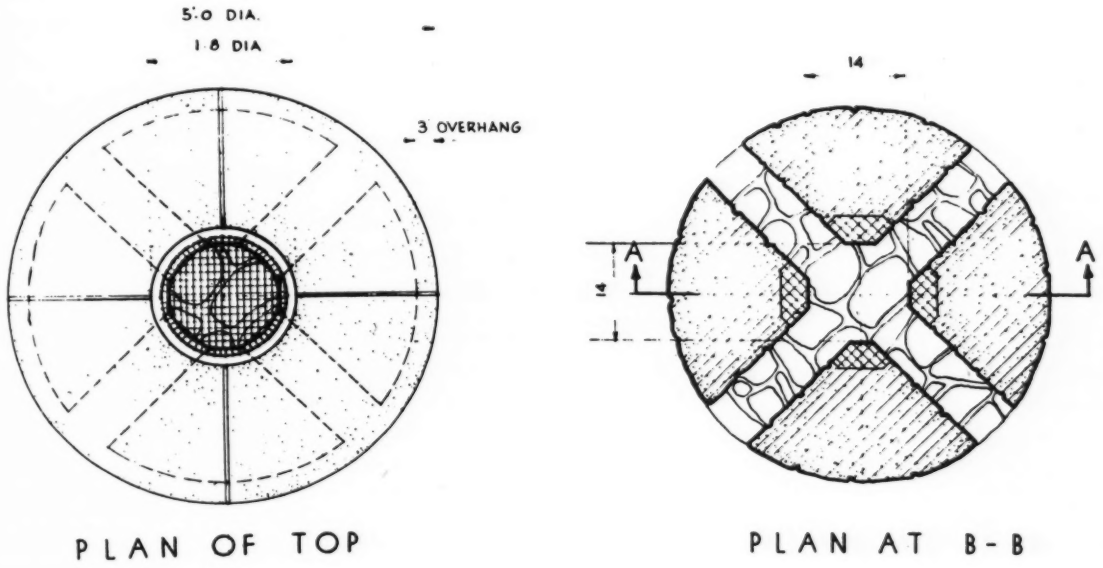
If the steps are to be laid in concrete, you will have very little to fear — but use the concrete so that none will show on the face or on the top of the step.

Simpler and easier to make are rail steps, filled with cinders and well tamped. Cedar or locust rails, four to six inches in diameter, lend themselves admirably to the purpose and if well soaked in creosote will last a long time. Steps should always be set into the slope so that the edge of the step comes to the level of the slope. Never allow the steps to extend above the grade, nor to pitch away from or down the slope. Steps so placed suggest slipperiness and make walking insecure; properly graded steps suggest comfortable walking even before you actually use them.

With winter coming on and outdoor work around the home property curtailed, there are many projects that can be undertaken in the home workshop—arbors, benches, tables. Such enduring woods as redwood, cedar, cypress or locust should be used; yellow pine, if it is treated first, can also be used. But before cold weather confines the master of the home indoors, he might like to construct an outdoor fireplace. Here is one of a rather special design, originally described in the March 1949 issue of The Garden, which is made of common field stone — aged stone, of course, is the more picturesque and pleasing.

The draft slots which run crosswise should point with the compass — north, south, east, and west. And the removal of ashes will be facilitated, if the bottom is finished in smooth cement or fire brick.




DETAIL OF OUTDOOR FIREPLACE

SCALE 0 1 2 FT.

A C PFANDER

The roughly triangular piers which carry the top plate are lined on the inside with fire brick; otherwise, the heat from the fire basket will cause gradual chipping away of the stone face.

The concrete top plate, because of its bulk and weight, will be easier to handle if made in sections. The form should be built on a flat surface, such as a level floor, and a mixture poured into the form of two parts sand and one part cement, of a consistency just short of flowing. If a mesh wire, about gauge 12, is cut to the shape of the form and placed approximately in the center of the plate, the possible danger of cracking will be greatly reduced.

The fire basket itself can be improvised (as in sketch) to fit the open center, or a more elaborate one may be fashioned by a blacksmith from a one-half-inch round or square steel rod bent to shape and welded.

When the fireplace is not in use, a sundial or bird bath may be inserted in the circular opening — thus it becomes an ornament in the garden picture. And there is no need for concern about wind direction — the four draft slots make it serviceable under any circumstances.

The foundation of the fireplace should be approximately twelve inches below grade. In wet ground, the base should be somewhat flared toward the bottom to reduce danger of frost upsets.

# A ROCK GARDEN In The NORTHWEST

*By* Ruth Doxsee

Looking across the Booth rock garden from the driveway.

**This article, based on the article by Mrs. Doxsee which originally appeared in "Northwest Gardens and Homes," Seattle, Washington, gives instructive pointers not only on a rock garden but on a bog garden and pool. —The Editor.**

"THIS IS A LOVELY ROCK GARDEN" would be the comment of any gardener as he visits the rock garden of E. J. Booth in Bellingham, Washington. As he walks through the garden with Mr. Booth and listens to him tell the story of this plant and that plant, he realizes the depth of its beauty. Many hours of study, many miles of travel to the mountains to collect plants, intricate construction — all are represented in this garden.

In the early 30's Mr. Booth began his hobby of rock gardening. He constructed a small rock garden of the size that is common on many places. Later he discontinued this small garden and began the first portion of the now existing rock garden located at the side of the driveway. Then the bog garden and pool were added, and gradually the surrounding area was taken in as part of the over-all garden.

The entire area except the bog section is covered with rock chips predominantly of hard sandstone, blue and gray.

As one walks along the paths he sees small native ferns, large clumps of glistening white candytuft, yellow anemones, about ten different kinds of dwarf and creeping azaleas and rhododendrons, lewisias, lithospermum, penstemons, and many saxifrages.

The garden is divided into three sections and three soil types. The portion in the foreground is neutral, of sand, leafmold, and loam. From the pool to the path, the soil is predominantly peat and loam with some sand added. The back portion (chip covered) is mainly sand and loam. The foreground portion of the garden is based with several rocks rounding to the rock formation for the stream and pool. Extending from the pool is the bog for plants requiring moist soil.

To construct the bog, a concrete base was made on the bottom and up to a depth of about one foot. This was filled with coarse gravel, a layer of sand, and then a mixture of peat and garden soil so that the soil came a little below the concrete in order that the moisture would be wicked up to the surface. There is an overflow drain under the soil and a drain opening some distance from the bog at the edge of the property on the lower hillside back. This enables Mr. Booth to drain the water in the winter months and thus prevent serious freezing. The bog is constructed with a slope so that the upper half is higher and slightly moist and the lower end is quite wet to accommodate the plants requiring really damp soil.

The garden in the back (chip covered) has soil mainly of sand, but a part of this has a special construction hidden here, too. A pool has been buried underneath the soil, much as it was in the bog, where the flowers that like constant moisture and good drainage can be planted. Here is soil that is basically lime where the difficult saxifrages may be grown; there are twenty-one kinds in this plot.

The pool was filled with coarse gravel, a layer of sand and soil. Over this was placed a layer of crushed oyster shells and then a topping of rock chips. This pool also has a drain so that it can be emptied in the fall to prevent freezing. It has to be refilled about once a week through the growing season. The pipe for this purpose is well concealed near a rock.

Prominent in the garden when I visited it last spring were the penstemons. *Penstemon Cardwellii* with its lavender flower is a native of Oregon, and *P. Menziesii* of a fuchsia shade is another native of the Northwest.

Especially outstanding was the deep yellow *Anemone sulphurea* with its large flowers that turn during the day as they follow the sun's rays. The plant stands approximately fourteen inches high. Many years ago Mr. Booth sent to Switzerland for seeds of this plant.

*Lewisia Howellii* with its succulent type foliage was a good-sized clump rising about twelve inches. At a distance it gives a color combination of blush-rose and white. The individual flowers are made up of nine pointed white petals; each petal is pencilled with five rays of rose. The over-all size of the flower is about one and one-half inches.

The large rocks in the foreground have compact growths of moss on them. Mr. Booth stated that the moss was on the rocks when he brought them into the garden and it has remained. In the winter months the moss is quite colorful. In the crevices of these rocks he has tucked wee plants of interesting dwarf ferns. One of these dwarf ferns he pointed out as being found in eastern Washington and others are native to other parts of the state. *Cheilanthes gracillima* is moss-green in the new growth and dark green in the older foliage. The foliage averaged about six

inches in length and was laid compact frond over frond.

*Silene acaulis* Mr. Booth found in the mountains at Twin Lakes near Mt. Baker. There was a tiny compact plant of *Cassiope lycopodioides,* and also *Epigaea repens* or trailing arbutus, an evergreen belonging to the Heath Family. It is native of the eastern states and is very difficult to grow in the Northwest. At Hurricane Ridge in the Olympic Peninsula, *Douglasia laevigata* may be found. It blooms very early and has a deep rose flower.

*Petrophytum Hendersonii,* a compact small mound above which rise curving spikes of tiny star-like ivory flowers, borne on stems of one and one-half inches, I noticed at the edge of a path. In catalogs this plant is often listed as spiraea. *P. Hendersonii* may be found growing on Mt. Angeles back of Port Angeles.

*Saxifraga oppositifolia,* which is very rare, was growing happily in its new setting in this rock garden. It is a native of the Rockies and grows over a wide range of country, but plants of of it are very hard to find. The flowers are a fuchsia to purple in color.

*Iris cristata,* the dwarf blue iris, was tucked in at the base of a large rock. It is a very small plant of about three inches in height. *I. tenax* found growing on Whidby Island, Washington, is somewhat taller and its blue flowers very showy. This iris, native to the Pacific Coast region, does not seem to yield to cultivation elsewhere. Nearby were *Aethionema coridifolium* var. 'Warley Rose,' of the Mustard family and commonly called a stone-cress, *Tulipa chrysantha,* and *Geranium lancastriense.*

In another planting were the native cacti of eastern Washington, *Draba aizoides, Lewisia rediviva,* a cactus native of Idaho, and cactus species from Montana.

*Lewisia rediviva,* commonly called bitter-root, has a soft lavender to pink flower. Two blooms were snuggled together with a touch of the green foliage showing. The plant couldn't have been more than three inches in diameter. The flower looked to me like a small water-lily. Lewisias may be found growing on the rocks in their native habitat near the Columbia River in eastern Washington. *Lewisia rediviva* is the state flower of Montana, where it covers acres of land with bloom in spring. In telling how this plant came by its name, Mr. Booth related that on the Lewis and Clark expedition, Lewis was interested in flowers and collected and pressed the plants. He took them with him on his long trek back to civilization and in showing the pressed flowers to friends upon his return, noticed signs of life in this plant. He planted it and it grew; then it was named Lewisia for him, and "rediviva" for having revived.

Interesting was *Polygala calcarea,* a member of the Milkwort Family, a small compact plant bearing vivid deep blue miniature flowers, borne six to a stem. They are set two flowers opposite on the stem, about half an inch higher two more, and at the top two. A tiny white fluff center gives the flower the appearance of a bee flying.

In the bog were dwarf *Andromeda polifolia, A. polifolia nana compacta, Houstonia serpyllifolia* and *H. caerulea.* Gentians were growing in the location maintained in the higher portion of the bog, where the moisture content is ideal.

*Gentiana verna,* a three-inch plant of baby blue flowers, was growing nicely. This species is a native of Europe and is quite difficult to maintain here.

An upright plant of nine to twelve inches high I was sure was a form of wild strawberry, but soon learned it bears the name of *Potentilla fragiformis.* The leaves are silvery green.

*Silene Wherryi* (the silenes are members of the Pink Family) has a flower much like that of the creeping phlox, but somewhat larger and of a soft pink.

*Potentilla nevadensis* has a tiny gold flower much like a buttercup and miniature foliage. *Potentilla verna nana* has smaller foliage than *P. nevadensis.*

*Dianthus neglectus* (glacier pink) is of a very fine grass-like foliage with small, odorless, red-purple flowers; the toothed petals are tawny beneath.

Beyond the main part of the rock garden may be found two dwarf firs, a dwarf yew, eight varieties of the dwarf spruce, seven dwarf and prostrate junipers, *Chamaecyparis obtusa nana* and *C. Lawsoniana Forsteckiana;* also *Tsuga canadensis pendula,* Sargents prostrate hemlock, and several *Cryptomeria japonica nana.*

Framing the three sides of the garden and at the crest of the slope is a group of native trees such as the vine maple, birch, alder. At the side are *Abies concolor* (white fir) and flowering quince. Bordering the garden and enclosing it from the highway are such tall trees as *Picea pungens, Abies concolor, Cedrus Deodara, Chamaecyparis Lawsoniana Allumii,* and *Cedrus atlantica.* These are based with low evergreens.

In identifying the native plants, Mr. Booth relies on *A Manual of Higher Plants of Oregon,* by Morton E. Peck, and *Plants of Mt. Rainier* which is available at the Mt. Rainier National Park or may be had by writing to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. The price is one dollar. This is well illustrated.

*Iris tenax, Tulipa chrysantha, Aethionema var. 'Warley Rose,' Geranium lancastriense.*

*Lewisia rediviva.*

*Lewisia Howellii.*

# ROSE CARE... Spray or Dust?

*By* Allen D. Albert, Jr.

THE PROBLEM of rose diseases and their treatment is one in which beginner and expert alike are almost equally interested. The old hand is likely to be more philosophical. Like Mark Twain's flees and a dog remark, the seasoned Rosarian is likely to be grateful for what little progress is made and he is incurable enough optimist to believe the solution is just around the corner.

Very real progress in insecticides is the basis for his hope that fungicides will soon be as efficient. Bug troubles are, indeed, pretty much a thing of the past!

The phosphate poisons or pyro-phos-ago followed closely on DDT. The last proved to have several marked disadvantages, though it was far superior to early remedies in both extent and coverage and residual effect. Insects, generally, fall into two main classes: the sucking pests and the chewers. The first class comprise the aphids, thrips, mites and their kind; the second are the chafers, beetles and their ilk. Older insecticides had to be of two kinds: one contact type like nicotine sulphate and the other an arsenic compound.

DDT's advantage was and is that it remains on the plant and poisons the insect that comes in contact with it, a weapon that was not earlier available. Its disadvantages were that insects have proved to have a distressing ability to build up a tolerance for DDT and that it did not get some of the worst of the pests, notably red spider or spotted mites, while it removed the predators that had kept them in check.

The phosphate poisons of pyro-phosphates proved to be much more effective. However, they also proved to be incredibly lethal in their concentrated form. Both "Tepp" and "Hepp" and other trade forms were so extremely dangerous to use that Rosarians simply chose not to take a chance. After all, a substance so dangerous that concentrate spilled on the skin could cause death and that required a mask, eye protection, and a head-to-foot soap sterilization after use was hardly the kind of thing to keep around the house.

Hope, however, was in sight. Benzine Hexachloride proved to be highly effective in the cotton fields; and when its unpleasant odor was removed by chemical rearrangement, the resulting Gamma Isomer proved just what the doctor ordered. As lindane it is an effective and satisfactory insecticide.

lindane was followed by malathion and a combination of the two is about as satisfactory as anyone could desire. I do not think we shall get anything much better until the "systemics" really are perfected. In essence, a "systemic" would be a substance that would be transmitted throughout a plant by the sap making the plant *itself* an insecticide, miraculous as that sounds. I believe them to be only a little way off.

The problem of spotted or red spider mites is still with us. Neither lindane nor malathion is wholly effective. One of the specific mitacides — I use "Aramite" — at times must be used. When the peculiar gray look appears on rose leaves or the whitish web on the reverse, or even the little sinners themselves can be seen through a magnifying glass, then strong measures are called for.

The real villain of southern gardening is blackspot. Mildew is always with us, likewise, but blackspot has discouraged more rose growers than any other thing I know about.

A wealth of fungicides has been developed, tried, and abandoned. My nurserymen friends tell me that their standby is still a mixture of sulphur dust and copper. However, they keep their plants cut relatively low and flower production is of minor importance if any. Likewise, having that as their chief occupation, they are out bright and early after every rain using efficient and expensive equipment not available to the usual Rosarian.

Several years ago the introduction of the dithio-carbamates provided us with what was the first really effective material—ferbam, or as most of us know it, "Fermate." In quick succession we have had maneb or "Manzate" and zineb, a zinc product, or "Parzate Zineb."

Of these three I have found "Fermate" the most effective and safest. "Manzate" has definitely burned in my garden and "Parzate" is not effective.

A year ago a new, different type of fungicide came on the market. This is "Captan." I should rate this as about equal to "Fermate" in effectiveness of control. Neither does a total job in my experience. Both are relatively effective, and the Rosarians may have a satisfactory garden if he uses either. The answer to more nearly total control, however, I think lies in some other considerations.

In the July 1953 issue of the magazine of the American Rose Society there appeared an article by C. Hugh Blair entitled, "New Trends in Summer Care." In October, the "Plant Doctor," Cynthia Westcott, wrote on "Fall Sanitation." Both of these splendid articles pointed out the same truth—that infectious diseases require a source of infection and that the first step in control is to eliminate such sources. Basically, this means complete sanitation. Infected leaves must be kept off the bush and ground, and during the winter all such must be picked off and burned.

The second factor is in the preservation of a clean, disease-free mulch. The third is the heavy spraying of bushes and beds while roses are in a dormant condition with a solution of lime sulphur. This is the beginning, and I agree with both authors that without these steps real control is impossible.

The second significant fact is that blackspot is not a simple nor uniform disease. Dr. William R. Jenkins of the Department of Botany, University of Maryland, reports the result of studies of blackspot in the 1955 Rose Annual. He identifies twenty-two races of blackspot by size and fourteen on the basis of contagion.

The findings reveal that varieties of roses are susceptible to some types, not to others; that temperature makes a difference with the contagion of types —some being more active at 60°, others at 70°, others at 80°; and that even the pH of the soil affects the results.

The variations, it is clear, will also affect the success or failure of fungicides in control. With this in mind, I have this summer used an all-purpose preparation, captan, malathion, and

(Continued on page 199)

# Make Mine an Old Fashioned!

*By* **Helen McCaughey**

ALL MY LIFE, I've loved the old-fashioned flower garden — the beauty by day, the heady fragrance that fills the air, and the flowers to cut for bouquets. These are memories of my mother's garden.

As I started the plans for my own garden, it was from these happy memories that the pattern began to take shape. Being primarily an iris grower, I had to weave into the picture many varieties, and still leave room for new varieties to be added each year, on the limited space of a city lot.

The background material is the first consideration. My favorites are the flowering shrubs that create such a riot of color in the spring and summer. The beautiful golden-bell forsythia, to combine with blue or yellow iris in an arrangement for the home or flower show. The flowering almond, with its dainty pink blossoms, to mix with early rose buds. The laciness of spiraea, or mock-orange, to soften an arrangement of almost any flower. The lilac for the early-blooming iris, and crape-myrtle for late summer flowers. For accent, redbud, dogwood, flowering peach, or crab, and wisteria. Like flowers, the flowering shrubs must be selected to suit one's taste, and the climate.

The border plants, too, must be considered, since they will frame the picture of one's beds. As an evergreen, that may be either clipped formally or permitted to grow since the height is only a few inches, one could consider the dwarf iris with jewel-like blossoms in early spring; or liriope, with its evergreen long slender leaves, which form quickly into a dense border, or teucrium which adapts well to border planting in most areas.

Inside the beds, one may have a riot of color from early spring until late fall. The early spring harbingers—crocus, hyacinths, tulips, and dainty daffodils—fill the beds as the following spring flowers lazily awaken from their long winter's nap, to bring their beauty into being.

Peonies, iris, carnation, asters, columbines, snapdragons, Oriental poppies, lilies, larkspurs, sweet Williams, and hemerocallis, all bloom happily together in my old-fashioned beds. Each tries to vie for attention, as they put forth their best blooms. The peonies, in their handsome bush-like form, make a picture not soon forgotten in the spring. Later, after they have bloomed, the foliage adds to the beauty of the beds. The iris gives a long period of color in my garden—the dwarfs very early, followed by the Median Group (this group includes iris from five to fifteen inches in height). By the time they have started to fade, the early tall bearded iris have begun to bloom, and by selecting carefully, early, mid-season, and late-blooming varieties, the iris season may be extended well over two months.

By selecting different species of iris, the bloom may be prolonged from very early spring until late fall. The colors of today's hybrids are beyond description. If you haven't seen a modern iris garden in the past few years, you owe it to yourself to do so. The wide range of colors offered is unbelievable.

Carnations fill the garden with color and aroma. They, too, come in a wide color range, to fit in any garden picture. And by cutting them back after the first blooms are spent, I get two blooming periods. Asters make a fine spring and summer display in the garden and are invaluable for cutting. Columbines lend a delicate air to a sometimes hard - to - work - with shady spot. Snapdragons add so much — and require so little attention. I like them to bunch, so as the blooms become spent, I break them off and thus have color from snaps from early spring until fall. Oriental Poppies are a wonderful companion plant with iris—they also come in many colors. I have pink poppies scattered through the bed where I plant pink iris and peonies. It's hard to say one has a favorite flower, when they all are blooming so beautifully.

In this triangular bed, terminating the approach up the driveway, grow pink-tangerine bearded iris including 'Chris,' 'Cloudcap,' 'Love Story,' 'Ballerina,' 'Floradora,' 'Happy Birthday,' 'Cathedral Bells.' Oriental poppy 'Helen Elizabeth,' peony 'Sea Shell,' and oncocyclus iris border the center of the bed, with Siberian iris and day-lilies completing the basic planting. Groundcovers are violas, followed by larkspur.

Lilies make a fine show in the spring garden. They look almost starched in appearance, and as accent plants are magnificent. Larkspur serves two purposes for me. The bloom is colorful, and the plant itself tends to shade less hardy plants with a mottled shade. Sweet Williams are as quaint and old-fashioned as can be. The colors are very pleasing, and the fragrance make them indispensable. Hemerocallis are also called companion flowers of the iris. They start blooming with the iris and continue right through the summer. They come in many colors from the palest creams and pinks to near blacks. It's during the hot summer, when little else is in bloom, that hemerocallis are most appreciated.

Flowers are a means of sharing the affections of friends, and in my old-fashioned beds, I like to use many combinations of bedding plants. All gardeners are quick to comment on a plant they think attractive—and the usual reply is, "Wouldn't you like a start of it?" I regard my beds as a friendship garden—each time I find new plants in bloom, I think fondly of the friend who was generous enough to share them with me. Most flowers combine happily together; and when you plant them, be sure to add extras, so that you may share them with your garden friends. This is one of the things that makes gardening such a pleasure. Whether you garden from the window sill of an apartment in town, or have acreage in the country, there are flowers that will adapt themselves to any situation and will give you the wholesome fun of gardening.

This bed accommodates the author's treasured historical collection of iris, a gift from John C. Wister, and the 1920 to 1953 Dykes medal winners from America, England, and France. In bloom is *Iris variegata* cultivated before 1790. Companion plants include peonies, day-lilies, daffodils, liriope, pinks, and flowering shrubs.

**COLOR HARMONY** (from page 173)

in picking a bouquet of lilacs for the living room, most of us would rather have some white, some lavender, and some dark purple to make a really colorful group. Carrying the same principle outdoors, a group of five lilacs gain in effectiveness if there is one white like 'Marie le Graye,' one 'Charles X' or 'Toussaint l'Ouverture' with three lavender 'Katherine Havemeyer' or pink 'Lucy Baltet.' Observation at nurseries or botanical gardens or on friends' places at blooming season can result in interesting large-scale flower arrangements outdoors. In these days when time and gardeners are scarce, it is important to get as much of our garden feeling and garden color with shrubs in combination. Often the whole garden effect can be gained with a handful of annuals, bulbs, or perennials, if the shrub background color is well thought out and attractive in itself. It is one form of flower arrangement that grows increasingly beautiful with the years with a minimum of upkeep and rearrangement.

In the flower garden itself, there is, of course, the greatest opportunity for effective color combinations and arrangements. It takes considerable personal observations and some trial and error to be sure of getting effective color use. Catalogue descriptions, unfortunately, do not distinguish too well between the blue-pinks and the yellow-pinks or the orange-yellows and the pale yellows. Probably no two people ever see color exactly alike, but there are certain classifications that are worth study and understanding. Perhaps the most dangerous of all the colors are the pinks. They can be roughly divided into blue-pink and yellow-pink. They should never be used in too close juxtaposition. The rose-pinks usually clash with everything but the palest yellow and the salmon-pinks combine well with pale yellow and golden-yellow. For example, most peonies are either pale or deep rose-pink. A very strong yellow iris makes a rose peony look dirty. On

the other hand, pink and blue lupines near rose-pink peonies have a natural affinity. The pink of the lupines has some blue in it, and the blue ones have a tinge of red in the blue and the blue-purple. Later in the summer, strong salmon-pink phlox like 'E. I. Farrington' or 'Salmon Glow' are very handsome in themselves and go nicely with pale yellow hemerocallis or even golden-yellow varieties. Rose-pink phlox, on the other hand, if it overlaps hemerocallis, will make a bad color clash. In the midsummer border dominated by hemerocallis blooms, it is much wiser to use mostly white and lavender phlox with an occasional salmon-pink but never rose-pink. It is, of course, easy to use nothing in the flower garden but pale colors — pale lavender, pale blue, pale pink, pale yellow. Under hot summer skies, this garden is likely to look anemic and washed-out by the sun. For that reason, some strong colors must be added, but with great discretion and as accents.

Many people dislike red in gardens, mostly because it is so often mis-used. In peony season, an occasional dark red peony gives the border depth and emphasis among the white and pale pinks. Red must be chosen the same way the pinks are. If other flowers in the garden tend towards the salmon-pink, any red used must be a scarlet-red — one with yellow in it. If the garden is mostly very pale yellow or white and rose-pink, the red should be more towards the dark or blue-red — the crimson or maroon tones.

Bright sun intensifies most strong colors and weakens the pale ones. For that reason outdoor combinations need to be studied outdoors. Sometimes a combination that looks extremely well inside the house will clash badly or fade out completely in outdoor conditions. In planning next year's garden from this year's blooms, it is wise to pick the flowers you think will blend and then try them together in a vase or just in the hand under bright outdoor sun, or in half shade — in the same conditions where they will grow in the garden.

Color outdoors is perhaps the most fun of any part of gardening. The possibilities are almost endless; and the charm of the whole grounds depends very heavily on the successful use of it.

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# MEET THE LATIN NAMES

**By Emily Gibson Latham**

In scientific nomenclature a plant has two names, the first *generic,* placing it in its genus or group, the second *specific,* distinguishing it from all others of the group. *Campanula* is a generic name. *Campanula carpatica* is a member of the genus that comes from the Carpathian Mountains; the specific name *carpatica* is its identification.

Specific names always tell something about the plant. It may be the country of its origin or the name of the man who discovered it. It may describe some distinguishing feature of the plant itself, such as leaf, stem, flower, seed, root, reproductive organs, form or habit of growth; or it may refer to the climate or type of soil and growing conditions it requires. For this reason, specific names are always interesting and often useful to the gardener. While there is a long list of these specific names, the same ones are used again and again for different plants. Glossaries are to be found in any good plant encyclopedia, which define their meanings. With a little practice, one recognizes *Viburnum acerifolium* as the maple-leaved viburnum, from *Acer,* maple, and *folium,* leaf; *Alyssum maritima,* the sweet alyssum, as a plant that will grow near the sea.

In a large genus such as *Campanula,* with some fifty-odd members, we may expect to find examples of nearly all types of specific names, so let's take a look at them classified as follows:

Names describing the leaf (based on Greek *phyllon* and Latin *folium)*

*C. biserrata,* double-toothed, referring to serrated margin.
*C. hirsuta,* hairy.
*C. isophylla,* equal-leaved.
*C. latifolia,* broad-leaved.
*C. macrophylla,* large-leaved.
*C. persicifolia,* peach-leaved (from *Persis,* the peach).
*C. rotundifolia,* round-leaved.
*C. velutina,* velvety with down.

Names describing the flower (based on Greek *anthemon* and Latin *flora):*

*C. barbata,* bearded.
*C. grandiflora,* large-flowered.
*C. macrantha,* also large-flowered.
*C. marginata,* margined (with a color).
*C. parviflora,* small-flowered.
*C. pauciflora,* few-flowered.
*C. punctata,* spotted.
*C. sparsiflora,* few-flowered.

Name stating color (of flower):

*C. alba,* white.
*C. coelestina,* sky-blue.
*C. coerulea,* sky-blue.
*C. lactiflora,* white( literally milk-flower).
*C. pallida,* pale.

Names describing inflorescence:

*C. glomerata,* flowers borne in clusters at top of stem.
*C. thyrsoides,* flowers in thyrse-like spikes.

Names describing reproductive organs:

*C. macrostyla,* having large styles or pistils.

Names describing seed (Greek *karpos, erion,* wool):

*C. eriocarpa,* having a woolly or down-coated seed.

Names describing calyx:

*C. Media calycanthema* referring to the colored calyx seeming to be a part of the flower, the "saucer" of the cup-and-saucer bellflowers or Canterbury bells.

Names describing stem (Greek *caulos,* stem):

*C. acaulis,* stemless.

Names describing habit or shape of plant:

*C. caespitosa,* tuft-forming.
*C. compacta,* compact.
*C. divaricata,* widely spreading.
*C. divergens,* widely spreading.
*C. fragilis,* trailing, delicate.
*C. pumila,* dwarf.
*C. pusilla,* dwarf.
*C. pyramidalis,* pyramidal.
*C. ramosissima,* very branching.

Names stating habitat:

*C. alpina,* high mountains (not necessarily the Alps).
*C. muralis,* growing in rock or wall crevices.

Names giving country of origin:

*C. alaskana, C. americana, C. arctica, C. carpatica, C. dahurica, C. ruthenica, C. sibirica.*

Names of men, discoverers, breeders, of the plant, etc.:

*C. Allionii, C. Backhousii, C. Forrestii, C. Grossekii, C. Hendersonii, C. Mayii, C. Moerheimii, C. Portenschlagiana, C. Rainerii,*

(Continued on page 190)

# HOLIDAYING IN JAMAICA

*By* Bernard Harkness

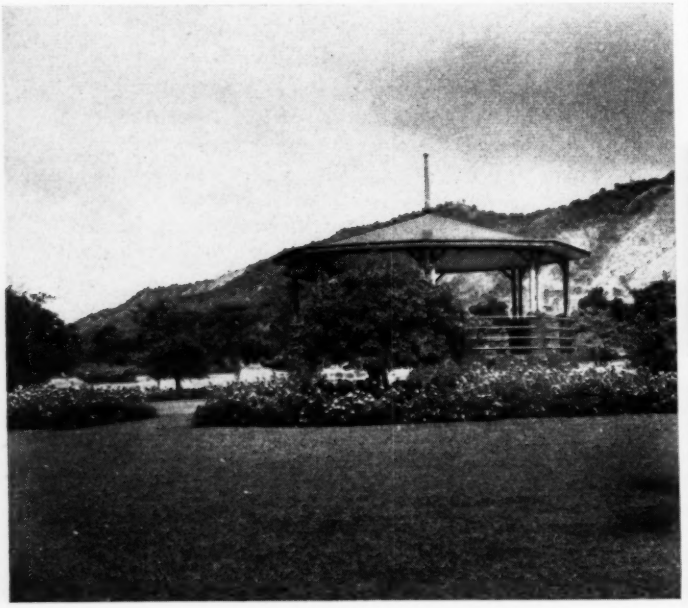
A broad expanse of lawn leads the eye to the mist-crowned mountains beyond Hope Gardens.

THE REPUTATION OF the island for vacation delights needs no enhancement, but I cannot pass up an opportunity to add a word about the wealth of plant life to be seen and enjoyed in Jamaica. Not that the Jamaican flora is unknown or its gardens of exotics unheralded, but so rich and abundant are they that the visiting plantsman can well imagine himself to be making notable discoveries. It was Professor Watkins's statement in *Gardens of the Antilles* that Hope Gardens was the only botanical garden in the West Indies which was actually expanding, that tipped the scales to favor Jamaica over its rivals in the Caribbean for my Christmas holiday trip of last year.

The center for ornamental horticulture is Hope Gardens. Its influence radiates over the island in such definable measures as a yearly distribution of over one hundred thousand plants from its nurseries. A "Catalogue of Plants for Sale" lists one hundred and fifty shrubs, forty-three climbers, forty-eight palms, seventy-four ornamental and forty-eight economic trees, along with ferns, bulbs, and herbaceous plants. Administered under the Department of Agriculture, Hope Gardens is both Kew and Veitch (pre-eminent as botanic garden and nursery) for the island. It is the Kew aspect, however, which is appreciated by the visitor. And it is a Kew-trained superintendent, Jack Downes, who, over the years, has seized every opportunity to create the varied features of the gardens.

It has taken more than a little selection and rejection, I suspect, to have the winter-flowering effects, especially of trees and shrubs, that Hope Gardens exhibits. Bougainvillea has been used

Bougainvillea clipped into formal mounds around summer house in Hope Gardens.



Bougainvillea in the bedding plant area with a row of clipped casuarina.

Anthuriums under glass at Hope Gardens—note the interesting Jamaican-made clay pots.

At Hope Gardens, ferns and orchids are luxuriant specimens under glass, though open at the sides.

extensively, but mostly a gentler bougainvillea in what Mr. Downes calls the sweet-pea shades as indicated by the varietal names 'Golden Glow,' 'Orange King,' and 'Snow White.' Surrounding the wide expanses of lawn, which seem to stretch out to the encircling hills, is a tree and shrub border. Among the taller trees are the African tulip-trees *(Spathodea campanulata)*, the brightest spot of the landscape during my visit, covered as they were then with large orange-scarlet flowers in clusters, with many rich rusty brown buds in the center. Isolated on the lawn, where the humming-birds can fly in from all sides, is the large shrub called Japanese hat. It is of the Verbena family—*Holmskioldia sanguinea,* a plant with bracted flowers, the bracts being oriental hat-shaped, beautifully bronzed in color with the small flower inside shading off towards red. There is no need to set down a catalogue of tropical plants; each one seemed precious and unique as I prepared to take a color photograph in the clear morning light. A visitor to the Hope Gardens begins to appreciate the infinite variety of tropical plants.

Across the mountain range that separates the island into the moist northern side and the drier southern plains lies an older botanic garden, the famous Castleton Gardens. It is an experience not to be missed to wander under the mature trees of all kinds and to see the

Bath Road to "The Fountain"—up a tropical ravine lined with towering coconut palms.

Castleton Gardens—at the foot of a sloping path, the ever-delightful three-lobed pool with a background of tropical vegetation.

charming pool with its background of tree-fern, ostrich-feather palm, and traveler's tree. Here, too, are rare plants from the wetter tropic areas, such handsomely exotic flowers as those of *Amherstia,* a leguminous tree from Malaya, and *Norantia guianensis,* a vine whose bright red flowers are like thimbles strung along a stem.

A little out of the way for most tourists but of great botanical interest is the small remnant of the Bath Botanical Garden which dates from 1799. Here I saw Napoleon's hat, *Napoleana imperialis;* the extremely fragrant ylang-ylang, *Cananga odorata,* in flower; the ornamental fruits of barringtonia—this a tree of great age—and of dillenia; and had a taste of Jackfruit. In charge of the gardens presently is Ivan Murray, whom I found to have been in upper New York State and at Princeton Nurseries in New Jersey during the war years, when Jamaica provided us with agricultural labor. An additional attraction at Bath is "The Fountain," an inn under government administration which is one of the two natural hot-water spas of the island. The ravine in which the inn is picturesquely situated is full of interesting native plants—philodendrons grow as though arranged by the skill of the gardeners at Julius Roehrs's.

So long has Jamaica been growing tropical agricultural crops and so many have been the plant importations, planned and unplanned, that plants seen from the highways may or may not be indigenous. However, fortified by knowing there are some five hundred ferns, about two hundred orchids, and proportionate numbers of other groups of plants that range from terrestrial to epiphytic in their habits, one is strongly tempted to take to the hills which are everywhere visible. For epiphytes ranging from shrubby gesneriads to minute orchids and filmy ferns, and for undisturbed and protected tree ferns and associated vegetation, the Blue Mountain Peak, seventy-four hundred feet high, and surrounding ranges amply reward the necessary foot-work required to reach them. In the interior are some rugged high areas of tumbled limestone blocks, which are a botanist's paradise for their high percentage of endemic species. Nearby are upland areas of grass called savannas, in one of which is recorded to be a southern station for royal fern. The plant that interested me the most was *Coccocypselum herbaceum,* a running vine with small, marble-sized, bright blue fruits. I had hoped that this relative of our partridge-berry might be induced to become a greenhouse or terrarium plant but seedlings have not been very tolerant of conditions offered them so far.

The Institute of Jamaica at Kingston, long a repository for botanical records, is now entering a very active phase of field work and publication, of which *A Preliminary Check List of Jamaican Pteridophytes* by George R. Proctor is a good sample.

Many plans for a Caribbean trip undoubtedly have been set in motion by the inspired *Flowering Trees of the Caribbean* with the Pertchik paintings. I found invaluable as handbooks for constant reference the 1949 and 1953 catalogs of flowering tropical trees published by Edwin A. Menninger at Stuart, Florida, for one dollar each and Circulars 31, 34, and 35 from the U. S. Department of Agriculture's Puerto Rico Experiment Station, dealing with ornamental vines, shrubs, and large-leaved ornamental plants, respectively, for the tropics.

# Spuria Test Garden in Houston, Texas

*By* **Margaret P. Slaughter**

**In the March-April 1953 issue of The Garden Journal, Mrs. Slaughter told of the setting up of the Spuria Test Garden in Houston, Texas, and we are happy to present this report from Mrs. Slaughter to our readers.—The Editor.**

THE GROUNDS of the River Oaks Garden Center, where our Spuria Test Garden is domiciled, were formally landscaped this past winter in anticipation of the Garden Club of America's annual meeting in Houston early in March, and this made imperative the transfer of our iris test beds to a new site on the western end of the grounds. An undaunted group of the local "faithful" labored for several days getting these new voluminous clumps untangled and moved to the new situation — many of us, I fear, with some reservations in our minds about how much effective blooming we might expect this spring.

Naturally, we were eager to make a good showing because of the expected influx of garden-minded visitors, since Houston was to act as host to both annual meetings of the Men's Garden Club of America and the Garden Club of America, during the first ten days of March. It was early for the spuria blooming, but happily, the handsome clumps were at their best, and the earlier Louisiana hybrids were enchantingly abloom!

Because of the more western exposure, the new beds are shaded by a line of young mimosa trees, with their feathery foliage and rosy heads of blossoms—a valued protection in our prolonged heated season. The community's interest in our project grows apace, for not only do we have more inquiries and casual visitors during blossom time, but many garden clubs are requesting guided tours as a regular feature of their spring programs. In April, despite the devastating late freezes, the spurias surprised us with a heartening display of color for several weeks.

In spite of the necessarily crowded season, the spuria iris group has made a significant step forward this year in the setting up of a grant for genetic research in spurias at the Texas A & M College, under the guidance of Dr. Henry H. Hadley and Professor Bahbub Ali, a geneticist from India. This undertaking was made possible by the generous contributions from the two Garden Club of America member clubs here, the River Oaks Club and the Garden Club of Houston. These scientists, Dr. Hadley and Professor Ali, are developing a technique for observing and recording somatic chromosomes in iris root tips. From this material gathered in our test garden, meiotic chromosomes are now being estimated. The reported basic number in spuria iris species is, I believe, around eleven, and many of these modern hybrids with counts of from thirty-eight to forty chromosomes must be near-tetraploids. To expedite their studies, one of our members, Edward Courtade, donated some twenty varieties to be grown at A & M, under the care of Professor A. F. Dewerth of the Department of Floriculture.

Reports from our iris friends in the Southern California Society indicate that the spurias are definitely to be fea-

**(Continued on page 196)**

# A DELIGHTFUL DWARF GINGER LILY

*By* Wyndham Hayward

THE ACCOMPANYING PHOTOGRAPH shows a plant of the Ginger Family (Zingiberaceae) in bloom, which may be *Kaempferia pulchra,* Ridley, although it was introduced into the United States some years back as *Kaempferia atrovirens,* N. E. Brown, and is currently offered on rare plant lists as *Kaempferia Roscoeana,* Wallich.

It is apparently a good species, not a hybrid, and its plight in botanical nomenclature is a common one in the middle of the twentieth century when so much of American botany has become more properly plant physiology, so much so that the problems of systematics and taxonomy are often neglected. *Kaempferia pulchra,* as we shall call it with reservations, was first described by Ridley in 1899 in the Bengal Asiatic Society Journal.

The original account states that the flowers are a lavender-rose, and that suits our lovely plant, which is becoming one of the most popular and "hottest" horticultural novelties of the time. Gardeners have called it "peacock plant" because of the handsomely marked "eyed" pattern of the rounded leaves, especially when grown in part shade under glass, out of the direct rays of the sun.

The writer first saw this plant more than ten years ago at the Mead Botanical Garden in Winter Park, Florida, where it had been presented by some admirer who did not know the name. Later a visiting botanist reported it was *Kaempferia Roscoeana,* and that is the name it has borne since that time. Evidently this plant came from an earlier importation by one of the plant pioneers of Florida—Simpson, Mead, Nehrling, or the Reasoner Brothers.

The writer imported his first roots from India in 1946 under the name *Kaempferia atrovirens,* a Bornean species. He wrote about the plant to Th. Hoog, head of the Dutch bulb firm of C. G. Van Tubergen, Ltd., and Mr. Hoog likewise imported some roots along with other kaempferias. The writer and Mr. Hoog came to the conclusion simultaneously that *K. atrovirens* was not the correct name. The name *K. Roscoeana* seemed similarly inadequate, as the descriptions of the Burmese species, *Kaempferia Roscoeana,* Wallich, both in the Botanical Magazine (Plate 5600) and in Dr. Karl Schumann's monograph of the Zingiberaceae (1903, Pflanzenreich) call for *pure white* flowers.

The flowers of our plant are a beautiful lavender-pink, with a creamy white dot at the center and a gold dusting or frosting on the petals in the morning sun. Late afternoons on a hot day, however, the flowers sometimes fade to a dirty white!

Schumann says in Latin under *K. pulchra* (page 79) that the species is close to the preceding *K. Roscoeana* except in the color of the flowers. The plate of *K. Roscoeana* in the Botanical Magazine shows the rounded leaves of our plant, with similar mottled, wavy, and striated markings.

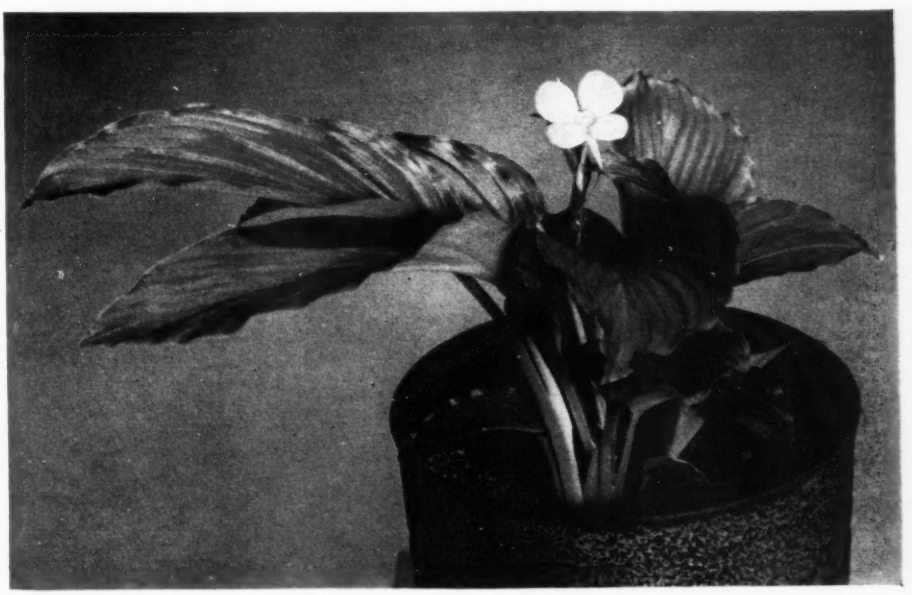
There evidently has been confusion even among the best authorities as regards *K. Roscoeana* and *K. pulchra.* For instance, H. F. MacMillan, Fellow of the Linnean Society and former superintendent of the government botanic gardens in Ceylon, wrote in his classic book, *Tropical Planting and Gardening* (1948 edition), *"Kaempferia roscoeana*—Ceylon, India, etc., *bright pink,* showy!"

R. G. Wilson, keen plantsman of South Miami, Florida, says in his 1955 rare plant list: *"Kaempferia roscoeana* — the two opposite, beautifully marked, iridescent leaves of this plant are stemless and open out flat. A fresh lavender flower opens each day from May to December. Plants are dormant in late winter."

As far as known, this species does not have medicinal or pharmaceutical values as do some other members of the genus. Its sole excuse is the almost indescribable beauty of the foliage and flowers, and of these last there seems no end in summer when the blooming season is on. It is the "bloomin'est" plant known among popular summer pot specialties. The flowers appear day after day from May to December, with hardly an interruption.

The writer grows *K. pulchra* in pots, flats, and cans. It likes the half shade of a lath house, but makes a more handsome specimen under shaded glass. Large and well-established plants will have leaves of eight inches diameter or more.

Last summer the writer sent a blooming plant to the Bailey Hortorium at Cornell University. Dr. Harold A. Moore, Jr., of the staff, reported later "it appears very surely to be *Kaempferia pulchra,* Ridley." He cited Holttum's figures and excellent descriptions in his "Zingiberaceae of the Malay Peninsula," Gardens' Bulletin, Singa-



*Kaempferia involucrata* (?)

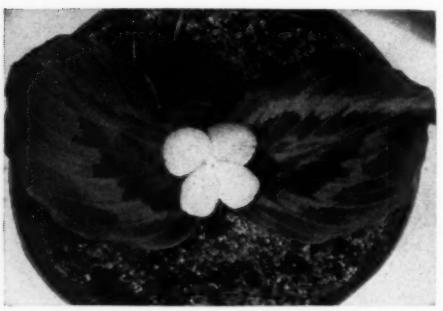
pore, 13:1-249, 1950, and Henderson's *Malayan Wild Flowers* as the principal grounds for his identification.

The plant is listed in Schumann as from Lankawi Island and Siam, and apparently has been cultivated in Java and elsewhere for many years. To the writer the flowers at their freshest in the morning are bright pink, with a lavender tone, but many observers, especially women, see more lavender than pink in the coloring.

The issue is slightly complicated by the fact that in the spring of 1955, the writer received a small lot of Zingiberaceae from Maurice Mason, the eminent British horticulturist and greenhouse plant fancier, among them a couple of roots labeled *K. pulchra.* These have bloomed and prove to have a very similar flower to that of our *K. pulchra,* but more definitely lobed, and the flowers are borne in involucres on stems which ultimately reach four or five inches in height. The foliage has grayish brown markings on green, not nearly as striking as the leaves of our *K. pulchra.*

Prof. Moore is leaving for Europe on his Sabbatical this Fall and will look up *Kaempferia* specimens in European herbariums, as there remains another pink-flowered species which stumps us at present, imported from India several years ago under the name *K. Parishii.* The Botanical Magazine, plate 5763, shows clearly it is not that. Van Tubergen imported the same species at the same time, listed it first as *K. Parishii,* then changed it to *K. involucrata* at the suggestion of the Amsterdam Botanic Gardens. Prof. Moore is not satisfied about that.

The situation is made more difficult by the fact that flowers of most kaempferias are tender, fleeting things, soft and squishy, and of little substance, so that only with great difficulty can an herbarium specimen be made, and that probably of unsatisfactory quality for careful examination and comparison purposes. In the case of *K. pulchra,* large plants can be grown in a six-inch pot or gallon can. The pairs of leaves multiply during the summer because new divisions are produced on the growing crown, so that by the end of fall there may be four to six divisions in the multiple crown.



*Kaempferia pulchra Ridl.*

The culture is simple, like that of maranta or even gloxinia, which *K. pulchra* resembles in that it dies down in winter and remains dormant in its pot till spring. The rhizomes are potted up March to June, using a typical gloxinia soil, organic, rich, loose, and friable with plenty of coarse sand and extra good drainage. It may be fed with the new soluble liquid fertilizers. The plants should be dried off and stored, out of the drip, in a warm dry place all winter. Shake the root crowns out gently in spring, divide and replant them in fresh soil, setting the tops about an inch below the surface. They will sprout and grow again readily. Presumably they are susceptible to the usual soil pests, and sterilized soil would be best, especially where nematode infestation is possible. The roots comprise upper nodules of the crown and lower fleshy roots.

**LATIN NAMES** **(from page 185)**

*C. Scheuchzeri, C. Weigandii, C. Wilsoni, C. Zoyzii.*

Names given simply in appreciation of beauty:

*C. eximia* (distinguished), *C. mirabilis* (wonderful), *C. nobilis* (tall and stately), *C. speciosa* (showy).

You'll agree that quite a lot of information about campanulas is revealed by their specific names.

It is always useful to know what soil a plant prefers, and sometimes this is stated in a specific name.

For wet soils we have:

*palustris,* from Latin *palus,* a swamp. *Caltha palustris,* marsh marigold, and *lacustris,* lakeshore, *Iris lacustris.*

*rivularis,* river-bank. *Anemone rivularis, Astilbe rivularis.*

*uliginosum,* from Latin *uligo,* moisture. *Vaccinium uliginosum,* swamp billberry.

*aquatica,* from *aqua,* water. This refers to plants that want their feet actually in water, as *Orontium aquaticum,* the golden club.

For dry soils:

*arenaria,* from Latin *arena,* sanded place. *Dianthus arenarius,* sand pink.

*maritima,* beach lovers. *Prunus maritima,* beach plum.

*muralis,* stone crevices and walls. *Cymbalaria muralis,* Kenilworth ivy.

*rupestris,* gravel, from Latin *rupes,* rock. *Veronica rupestris.*

*rupifraga,* from *rupes* and *frangere,* to break, a plant that breaks through stone. *Papaver rupifragum,* rock poppy.

For shade:

*nemorosa,* from Greek *nemos,* a grove. *Anemone nemorosa.*

*sylvatica* / *sylvestris* from Latin *sylva,* a wood. *Anemone sylvestris.*

For sun or open fields:

*arvensis,* from Latin *arvum,* a field, *Cerastium arvense,* field chickweed.

*pratensis,* from Latin *pratum,* a meadow. *Trifolium pratense,* red clover.

The habit of a plant— tall, dwarf, creeping, climbing — is important in planting. Many plant names tell us what we want to know in this respect.

Tall is *elata, elatior, excelsa* and sometimes *grandis* and *giganteum. Primula elatior,* the oxlip is taller than the quite similar *P. veris,* the cowslip or common primrose. *Picea excelsa* is the towering Norway spruce.

Dwarf is *pumila, pusilla* and *humilis,* and sometimes expressed by the prefix *chamae,* as in *Chamaedaphne,* the low daphne. *Iris pumila* is familiar in our gardens as a dwarf iris.

Creeping plants are described by many names—*repens, reptans,* and *radicans* are common. *Radicans* means spreading by taking root along the ground, as does *Euonymus radicans. Polemonium reptans* is the low spreading Jacob's ladder with creeping roots. *Mitchella repens* is the creeping partridgeberry.

Climbing is *scandens* as in *Celastrus scandens,* the bittersweet.

Marked shape, such as pyramidal, is

**(Continued on page 198)**

# Plant Boxes and Pockets

*By* Alice L. Dustan

●

**A POCKET BREAKS BRICK TERRACE OF COLONIAL HOUSE**
For an airy effect and future shade, on the south side of a red brick Colonial house, a crabapple has been planted in this oval planting bed. Underplanting includes iris, columbine, and spring bulbs, edged with parsley and lambs-ears. The bricks of the raised edging and terrace paving match those of the old house, which has white trim.

Plant boxes have come into their own again. From the tacked-on wooden porch box of Victorian days, they have developed to include built-in stone ones, featured in contemporary and ranch style houses.

With this new version of plant box might be bracketed the planting pockets in today's terraces and retaining walls. Occasionally, planting pockets are added to house interiors. With this arrangement, house plants tend to grow thriftier and prove easier to maintain than those in individual pots.

It takes careful planning to work out plantings for pockets and boxes. Being in prominent locations, the plants need to look well over a long period. Culturally, they must be adaptable to the particular exposure, as well as the tight confines.

Planting pockets and bottomless masonry boxes which are built right into the earth can hold evergreens, such as yews and Japanese hollies. Few woody plants will overwinter in wooden boxes, for which seasonal material makes better choice. All boxes should be at least eight inches deep. Shallower ones, often added as decoration by builders, will not hold enough moisture to accommodate a choice of plants or tide them through vacation periods.

HOUSE PLANTS SUMMER ON VICTORIAN PORCH
Ivies, peperomias, tradescantias, ferns, and foliage begonias make up this collection of foliage plants which thrive on humusy soil in a wooden box shaded by a nearby maple. Steadied by wooden blocks, the boxes rest on the gingerbread railing of a Victorian dwelling.

PLANT BOXES DOUBLE AS PORCH RAILINGS
Wax begonias flower almost continuously with but two or three hours of sunlight a day. Their foliage blends well with that of Japanese hollies and yews in the foundation planting. The Victorian house is white with black trim, including boxes and iron step railing, as well as door, shutters, and mailbox.

RED COLEUS WITH WAX BEGONIAS IN BRICK
Morning sunlight, only, assures rich color to coleus and flowers of wax begonias in a deep masonry box beside the back porch steps of a white colonial house. Variegated vinca trails through railing from jardinierre on step; false-cypress grows at left.

CONVENTIONAL COMBINATION ALWAYS POPULAR

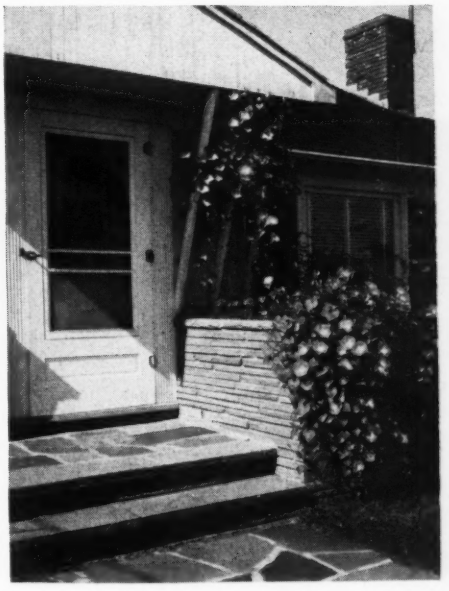
Pink geraniums and variegated vinca always go well with a white house, particularly one of Cape Cod character. These plants flourish in full sun or, as here, in light shade. The wooden box is bracketed to the windowsill.

PETUNIAS SUPPLEMENT NEW EVERGREEN SHRUBS

Red 'Comanche' petunias contrast with the nile-green clapboards of this split-level house, accenting the yew in permanent stone box beside the door. The same variety of petunias repeats below the lamp post to fill in between Andorra junipers in foreground. Both plantings receive almost full afternoon sunlight.

SIX PETUNIA PLANTS FILL A BOX

Afternoon sunlight, plus heat reflected from the white house, encourages these annuals to bloom continuously through the summer. Short branches of spruce or fir can take their place after frost, to last at least a month or two during the winter if stuck into moistened soil.



MORNING-GLORIES TRAIL AND CLIMB

From a few seeds sowed in spring, 'Heavenly Blues,' supplemented by red geraniums, gaily fill a permanent stone planter. Southwest exposure, without trees, assures constant bloom from both. The flowers show to advantage against the white house with flagstone box and walk.

EVERGREENS DECORATE A POCKET SHADED BY OAKS
Specimens of *Pieris japonica* and dwarf yew, supplemented by Chinese holly on a lower level, is viewed from the concrete terrace of a contemporary house in summer and from the dining-room the year round. Tiny plants which fill in at the base include heart and pedata ivies, with winter aconite, species crocuses, pink wood hyacinths and crested iris for early color; dwarf wax begonias and oxalis for summer color. The wall behind the planting is of green stucco with cream trim.

BOLD TROPICAL PLANTS FOR INDOORS
Large pots of *Monstera deliciosa* and crassula are sunk in a peatmoss bed, which becomes covered with trailing stems of smaller potted ivies, peperomias, and wax begonias. All flourish in the south exposure of this contemporary house corner with flagstone fireplace and hearth, white plaster walls, and natural wood trim and ceiling.

# Perfume

## THE CAPTURED ESSENCE OF FLOWERS

*By* **Hedwig Michel**

PERFUMERY IS ONE OF the world's largest industries. It is the most cosmopolitan trade of history, an art as old as humanity. Since ancient times legends and poems in every known language have praised the powers and miracles of the fragrant scents captured from flowers.

In Arabia, Persia, India, and the Far East the art of perfumery was practised and developed. Pilgrims, Crusaders, and tradesmen brought it westward on camels' backs, by vessels, and other means of transportation. Sweet oils and gums, spices and dyes were media in ancient trade, valued as barter, famous as gifts, dreaded as deadly weapons in the hands of treacherous enemies.

Originally an exclusively Oriental art, perfumery today is closely knitted to the Occident. There is hardly a country that does not provide one or more of the innumerable ingredients for the perfume industry. Secret formulas handed down from long-forgotten ancestors are cherished possessions of perfume artists, as valuable to the trade as the healers' prescriptions to medical science or the ancient cookbooks to culinary experts. Perfumery is an integral part of life—from the cradle to the grave no one can escape it.

Despite modern techniques the floral substances prevail in perfumery, and the tropical and subtropical countries of Asia and Africa and southern Europe still control perfume flower markets. No other country can compete with their systems of patch cropping and family farming which guarantee a minimum of production cost.

Although France has been the center of continental perfume flower farming for many centuries, Florida may become a competitor through proper choice of sweet-scented flowers, as soon as the labor problem can be solved and a new method of highly mechanized agriculture introduced.

The Florida peninsula is predestined to enter the race and carry on traditions of the Orient in perfume flower farming, as sun and air and soil here are ideal for the cultivation of certain fragrant flowers. Plants fully adapted to Florida's conditions, such as the orange, rose-geranium, jasmine, are among the oldest to yield valuable perfume oils. Florida's possibilities compare favorably with southern France, where large acreages along the Riviera are planted with jasmine, carnations, roses, and other flowers, raised not for floral displays but exclusively for the purpose of perfumery. On the Mediterranean coast five thousand plants of jasmine to an acre offer a normal yield; and at Grasse, the capital of scent in southern France, the delicate flower petals are processed in the distilleries after they have been picked at dawn before the dew of the night has vanished and their odor evaporated.

Jasmine, the famous perfume flower of Persia and India, thrives in Florida in almost as many varieties as are known in its homeland. The scents of creeping, trailing, climbing jasmine, star-shaped night- or day-bloomers, fill the air about nine months of the year. "Sweet smelling flower" is the Arabian term for jasmine, which also is the popular name of this member of the Olive Family. Jassamine is the favored name in poetry, while *Jasminum* (all three terms applied to the same flower) is the accepted botanical name for the genus which comprises over two hundred species of tropical and subtropical evergreen shrubs.

In the sixteenth century, *Jasminum officinale* from Persia reached European countries. *Jasminum grandiflora* from India followed, also *Jasminum Sambac*. All three are recognized perfume species of intense fragrance which, contrary to other scents, can not be imitated. *Jasminum Sambac* is also raised for the special purpose of flavoring Chinese tea.

In Florida's gardens another internationally famous perfume flower, "the West Indian red jasmine," the Mexican frangipani, is well established. This tropical nosegay frangipani has large, long leaves which support the graceful red or yellow or white flowers. Charles Plumier, the French botanist of the seventeenth century, gave his name to frangipani as *Plumeria rubra, P. acutifolia,* and *P. alba*. In the Far East the plumerias are widely cultivated as "temple trees" in Buddhist temples and graveyards.

The popular name frangipani has different derivations. It is said that the name comes from the French word *franchipanier* (meaning coagulated milk), which refers to the white sticky juice that exudes when the plant is wounded. In another version an Italian nobleman of the Middle Ages, the Marquis Frangipain, concocted a secret formula of a compound perfume and gave it his name. Frangipani compound today contains sandalwood oil, musk, sage, orris root, neroli oil, and various other constituents. Frangipani is also the trade name of the essential oil distilled from the plumerias and a most valued ingredient in other blends. Factories in different parts of the world exploit the fragrant petals, intricate machinery extracts and preserves the delicate scent. Frangipani closely resembles the high qualities of the jasmine.

The many miracles in perfumery result from the delicate blending of ingredients, and the artists chosen to create new formulas are called "noses" in the modern trade. They are the specialists of man's most primitive sense—smell. Ancient methods of burning fragrant oils and gums—the Latin *per fumum,* through smoke—gave this industry its trade name. The burning of plant parts—flower petals, leaves, bark, roots, fruits or seeds—is still an applied art in religious rituals as it was thousands of years ago. Essences, ointments, and balms in the tombs of ancient Egyptian mummies have retained their potent fragrance for more than three thousand years. Much about the use of incense, sweet oils, and balms is revealed in the Bible.

From the "Land of Spices," frankincense was brought to Palestine by King

Balthasar of Ethiopia "for the high priest;" a gold-mounted horn filled with myrrh was placed in the cradle at Bethlehem by King Caspar of Taurus "for the healer." Over nineteen hundred years ago these gifts represented wisdom and power.

The same frankincense, the same myrrh are still in use today by priests and healers and by artists and scientists in the vast field of perfumery. Both ingredients are derived from plants grown in Arabia and the Far East.

The true frankincense is an oil from the genus *Boswellia,* a tree related to the terpentine or "Terebinth Tree." Frankincense throughout the ages has been and still is the most important incense resin, a pure substance of a single plant, not a composite product. The species, *Boswellia Carterii,* mainly used for the production of frankincense, has pure white, star-shaped flowers and compound leaves resembling those of the mountain-ash. The gum, which is obtained by making successive incisions in the bark of the trunk and the branches of living trees, exudes in the form of brittle, glittering, roundish or oblong drops. The first incision yields the purest and whitest gum; in later incisions the gum is spotted yellow or red, and it loses the whiteness altogether upon aging. Frankincense gum has a bitter taste and a strong balsamic odor in the form of a volatile oil when warmed or burned.

The myrrh of the Bible is obtained from two different trees, *Commiphora Kataf* and *C. Myrrha.* Both are low, scrubby, thick and stiff-branched, thorny shrubs or small trees, growing in rocky places and especially on limestone hills. The leaves are trifoliolate, the fruit oval and plum-like; the wood and bark are strongly odorous, and a gum exudes naturally from the stems and branches. A more abundant flow of this gum is derived from artificial incisions. As it first exudes from the tree, it is a soft, clear, sticky, white or yellowish brown resin.

In ancient times myrrh was burned as incense on the altar of the sun gods at Heliopolis daily at noon. Persian kings wore it in their regal crown. As late as the reign of King George III of England, from 1760-1820, myrrh was one of the spices burned ceremonially in the royal chapels.

Throughout the ages, alchemy and chemistry have been as closely involved in perfumery as botany. Even zoology provides ingredients of lasting value, though of most repulsive odors. Animal exudations are indispensable in the production of high-quality perfumes. Ambergris, a greyish white fatty substance often found floating in the sea or along shores of tropical countries, the exudation from the intestines of the sperm-whale, is one of these extremes and a product highly priced. But how it smells! This magic substance can only be released through hot alcohol or ether or other volatile oils, while water binds its faculties. Another mixture makes one shiver, too. Destined to produce enchanting odors, sawdust of sandalwood is combined with swine dung and burned as incense in Chinese temples even in this modern age! To provide binders and fix scents, glands of musk deer, of beavers, and of civet cats are indispensable constituents. The ever-active law of opposites works toward perfection — "Les extremes se touchent."

The latest surprise to international perfumery was achieved by American researchers and chemists. Through the emergencies of the two World Wars, import in the United States was reduced to almost nothing, but perfumery and cosmetics had to be obtained. One way or the other, the necessary ingredients had to be fabricated at home and —as simple as that—the inventive scientists started the newest branch of perfumery — the synthetics. Extracts from coal tar and from crude oils were combined with scents of approved formulas. To the amazement of the international trade, these synthetics approximated the perfumes obtained from flowers so completely that they solved, to some extent, the American perfumery problem. With the aid of modern laboratory equipment and improved techniques, by-products of the vast field of perfumery began to appear on the market. From rubber toys to house paint, this new industry rivals today in capacity the parent industry.

And so American research continues. In a recent report from Dr. Ernest Guenther, the chief research chemist of Fritzsche Brothers, expert in perfume flower farming, it was emphasized that "food, drug and cosmetic industries may become independent of imports of essential oils as the progress made in the development of growing essential oils in the Western Hemisphere increases." Already more than sixty oils from flowers, leaves, or seeds are marketable for various uses: for perfumes and all the related industries; for pharmaceuticals; for flavoring beverages, foods, confectionaries.

America's role in the perfumery industry has changed from the largest-importing consumer to also an exporting producer, and Florida's climate and soil and virgin land are ready for perfume flower farming.

**SPURIA TEST** (from page 188)

tured at the annual meeting of the American Iris Society there in 1956. This is a significant shift indeed, for interest in the American Iris Society has been centered in the tall, bearded types. Climatically, the growing of bearded iris must be limited in our humid region, and for iris in our gardens we remain largely dependent upon development in the future of the less showy, but graceful and lovely, beardless types. Many of our local members are making their first efforts at "crossing" this year, and others of the more enterprising anticipate some first blooms from their seedlings.

In spite of the quite hectic season local gardeners have been through this year, we feel enthusiasm and faith in the future of spurias, both as assets from the commercial standpoint and as treasured garden decoratives at home.

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# FOR THE YOUNGER GENERATION OF GARDENERS

## Grandpa's Letters to Janet

I HOPE YOU LIKE this picture of the squirrel on the big flat rock in the Hemlock Forest. See how his feet are spread and his tail arched. He is saying "Thanks" for all those Oregon walnuts you sent him. You would have enjoyed being with us, but next best will be to have your daddy read to you about what happened that day in The New York Botanical Garden.

A week ago when Grandma and I visited your cousins in Bound Brook, New Jersey, Douglas asked when he could go with me to The New York Botanical Garden in Bronx Park. Douglas is having Nature Study in school and he says it is fun. They are learning about trees and their leaves just now. He has a book with pressed leaves from many different trees.

When I asked if he had something special in mind, he said, "Yes, the Botanical Garden has all the trees I know and many more that I want to learn about. Also, there are small signs on the trunks of many telling the name of the tree."

"There is another reason," continued Douglas. "I want to visit those smart squirrels, Snooper and Snuffy."

So last Wednesday we motored up to The New York Botanical Garden, taking with us the last big bag of walnuts you sent, and some peanuts, and apples, too. Did you know that squirrels like apples? We parked the car and headed for the Hemlock Forest. After we had fed five or six squirrels, they must have passed the word along. By the time we arrived at the big flat rock in the Hemlock Forest, a parade of squirrels was following us. Of course, word had reached Snooper and Snuffy. They were pleased to see us and came right up to sit on Douglas's shoulders. Gramp emptied the bag of shelled walnuts on the flat rock and the peanuts, too. Douglas cut some apples into small pieces, and the squirrels came up and ate right out of his hand! When every last morsel had been eaten, Snooper must have told them all to say "Thanks," and that is when I took the snapshot of Snuffy.

Then along came a man with a blue uniform and cap. He had a big smile on his face as he said, "Would you look who is here — Gramp and Douglas. Snooper and Snuffy, and a whole squad of squirrels. No wonder I didn't see any on my patrol!" It was Mr. McGuire, who spends much of his time in the Hemlock Forest and the Thompson Memorial Rock Garden. He is a friend to all the animals, the birds, and the trees in his territory. Also to many visitors who come to the park.

Douglas told him we were learning about trees and leaves. Mr. McGuire said, "You could not have chosen a better place. Can you name some trees?" "Yes," said Douglas, "I shall tell you just a few which I remember alphabetically. Ash, beech, and birch. I think copper beech and white birch are beautiful. Cedar and catalpa, which has big heart-shaped leaves, pretty blossoms, and long bean pods. D is for dogwood, and that is my favorite tree. Elm is very tall and shaped like a vase. Fir is green all winter. Gingko has fan-shaped leaves, and H is for holly, hickory, and hemlock."

"Very good," said Mr. McGuire, "you are making real progress." "I don't suppose you ever heard a tree speak?" Douglas replied, "I have heard them sigh, but I have never heard one speak." Just then in the gentle breeze, there was a sound of rubbing branches. "Did you hear that? What did it sound like to you?" asked Mr. McGuire. "I heard crack, crack," said Douglas. "I suppose that is what it sounds like to most people, but I like to think they are saying, 'Hi Mac.' I have to be going now. Come again soon."

So after Mr. McGuire left us, Snooper squiffled a "go home" call and all the squirrels went home except Snuffy and Snooper.

"Come along Snuffy and Snooper," called Douglas, "and I shall tell you the names of some of the trees here in the Hemlock Forest. I cannot name them all, for we are just beginning to learn about trees in our Nature Study class." Douglas reached into his pocket and brought out an acorn, which he showed to Snooper. "This comes from an oak tree," he said, and, walking a short distance up the road he pointed. "Here is an oak tree," he exclaimed. Snooper ran round and round the tree in a happy flurry of excitement. Grandpa laughed. "I think he is telling you how smart you are," said Grandpa.

Douglas then brought a button ball from his pocket and showed it to Snuffy. "This is from a sycamore," said he. "Let's go find one." Sure enough, a little farther on and Douglas stopped. "A sycamore!" cried he. Snuffy, too, ran round and round, chattering his approval of the nature lesson. Douglas ran happily on. "That is a maple just ahead," said he, "and here is an ailanthus." "Look, Grandpa, the squirrels are not coming too close to this one. They do not like the odor of ailanthus. Neither do we!"

"Now look at this leaf, shaped like a mitten—this is from a sassafras tree." It is always a surprise to the nature stu-

**Snuffy pauses on rock in the Hemlock Forest of The New York Botanical Garden.**

dent to find the sassafras tree has three different shaped leaves and one of them looks like a mitten.

Later, as they were walking outside the Thompson Memorial Rock Garden, on the ridge above the roadway, Grandpa remembered there was a pignut tree nearby. "Have you ever heard of a pignut tree, Douglas," he asked. "Yes," replied the boy, picking up a nut and a leaf from the ground, "that is a compound leaf. Those five leaflets make one leaf. Other hickory trees have compound leaves and so have white ash and horse-chestnut." Grandpa was very proud of what Douglas had learned about trees in so short a time.

Snooper and Snuffy have a private squiffle call just for each other. Douglas learned how to make that call, and before he said goodbye to the squirrels, he wanted to be sure he had not forgotten the call. So he imitated the call and the two squirrels promptly answered. You see, by knowing how to give that call next time he arrives in the Hemlock Forest, Douglas won't have to search for his friends. They will both come arunning to the big flat rock when they hear his call.

Well, that was a very pleasant visit to The New York Botanical Garden, and I'm glad that Douglas knows so much about the trees and their leaves.

**LATIN NAMES** **(from page 190)**

revealed by specific names; *pyramidalis,* as *Campanula pyramidalis* and among ornamental evergreens, *Thuja pyramidalis,* arborvitae, and *Taxus media pyramidalis,* yew. We find perfectly round shape in *Thuja globosa* and stiffly upright with ascending branches in *Taxus baccata fastigiata,* the Iris yew, and *Populus fastigiata,* the Lombardy poplar (more commonly *P. italica).* The opposite habit, weeping or pendent, is called *pendula,* as in the lovely Japanese weeping cherry, *Prunus pendula.* A gracefully arching habit is *suspensa,* illustrated by the golden fountain of *Forsythia suspensa.* Shrubs of tree-like habit are *arborescens,* as *Hydrangea arborescens,* the familiar tree hydrangea.

Another large group of specific names describes color, usually of the flower. Red is *rubra, carnea, sanguinea* (blood-red), *coccinia* (scarlet), and *incarnata* (crimson). Sometimes a brilliant flaming shade is referred to as *fulgens,* flashing, or *splendens,* shining. *Heuchera sanguinea* var. *splendens* is a very brilliant red. *Asclepias incarnata,* the swamp milkweed, is a lovely crimson and so is *Erica carnea,* the red heather. *Geum coccineum* is the essence of pure scarlet, and *Lobelia cardinalis,* the cardinal flower, is cardinal-red, just as the name indicates.

Pink is only *rosea* with occasionally *erubescens* or blushing. There are no Latin terms for the beautiful shades of salmon and coral-pink created by modern hybridization, flower colors which rarely, if ever, occur in Nature.

Yellow, like red, has many names. From the Greek we have *xanthos,* as in *Xanthorhiza,* the yellow-root, and *Nymphozanthus,* the yellow pond lily; and *chrysos,* as in *Chrysanthemum* and *Aquilegia chrysantha,* the golden summer columbine. From the Latin comes *flava,* and we have *Iris flavescens* (yellowish), *Iris flavissima* (very yellow), and *Hemerocallis flava,* yellow day-lily. The lemon day-lily is *Hemerocallis citrina,* still another name for yellow. Running into orange, we come across *Hemerocallis fulva,* tawny day-lily, and *H. aurantiaca,* which is pure orange. Golden-yellow is *aurea* or *auratum* as in *Iris aurea* and *Lilium auratum,* the gold-banded lily.

Blue is divided into light or sky-blue, *azurea, coelestis,* and *coelestina,* and deep blue, *caerulis* and *cyanus,* as in *Centaurea Cyanus,* the bachelor's button.

For purple we have only *amethystina* and *lilacina.* When we read *purpurea,* it means a bluish red, supposed to be the Tyrian of the Ancients. The Joe-Pye weed, *Eupatorium purpureum,* in its first brilliance, probably represents this color, though it quickly fades to an old rose.

Green is *viridens* or *viridissima,* very green, often applied to evergreen plants, though evergreen is more commonly *sempervirens,* as in *Buxus sempervirens.*

As well as describing plants, the Latin names can take us around the compass to their original habitats or around the globe to the countries and continents from which they have been collected.

Eastern is *orientalis,* western *occidentalis,* southern *australis,* and northern *borealis, hyperborealis,* and *septentrionalis.* Southern and northern in American plants are also indicated by *virginica* or *virginiana,* and *canadensis,* which are general climatic terms rather than specific references to these actual localities.

There is not space to list the names of all the countries cited in the names of plants. Suffice it to say that they are given the endings *ica, ensis* or *ana,* meaning from, and are not spelled with capital letters as we are accustomed to see them. This tends to disguise them as, for instance, *ruthenica* from Ruthenia. Some of the strangest of them are Chinese, *hupehensis,* from the Province of Hupeh, *szechuanensis,* from Szechuan, *yunnanensis,* from the Province of Yunnan, *tangutica* from a former province of Tangut now included in Ningsia. *Amurensis* means from the region of the Amur River on the northeastern boundary of China, and *dahurica,* Dahuria in Siberia. In every one of these names lies a romance, a story of adventure, endurance, daring and delight, of the expeditions, often by lone white men or two together with their native helpers, which brought us the plants which so enrich and beautify our gardens today.

While these articles touch only the fringes of the meaning and interest of plant names, perhaps this brief glimpse will add to your pleasure in your garden flowers and lead to further study. The meanings of plant names can be found in garden encyclopedias, and in other reference books in the library of The New York Botanical Garden and similar libraries elsewhere.


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ROSE CARE (from page 182)

"Karathane" and added to it an ounce of "Fermate" to a pound of the other. It has been more highly successful than ever in the past. Another method, probably better, could be used. Using differing materials alternately would have several advantages. This next year I shall use a captan - malathion - "Karathane" once a week and the next a "Fermate" - "Karathane" - lindane. The advantage is the variation in fungicides and insecticides both. I have found all these materials compatible.

The mildew problem (and rust as well) is more difficult. Fortunately, sulphur, which I have found likely to burn in 80° weather, is safe in colder weather and very effective. "Karathane" has proved to be strictly a warm weather product for me. It has not controlled mildew or rust in either the spring or fall, when nights are cold. There is need, therefore, to use a material containing sulphur in spring and fall and then one with "Karathane" in the summer.

Likewise, malathion is not so effective against spotted mites in the colder weather and a good miticide helps there.

The old question of "to spray or dust" still remains unanswered. I am inclined to believe it is largely a matter of preference. Dust is easier, quicker, and the mixing is correct. Spray is highly effective, cheaper, but has a tendency to spoil the flowers and is unsightly. I use spray when there are few if any blooms and dust most of the time — once a week as regularly as clockwork.

Dust when the foliage is not wet; rain or dew will burn badly! So—dust in the evening when there is little wind and the foliage is dry. Spray in the morning so that the foliage will dry before the heat of the sun.

Foliage feeding? Only in the cooler seasons. In my experience, it burns very badly in hot weather.

I have not said anything about antibiotics. As time goes on, I think these will be valuable. This past year I tried them out, but I am not sure of the results. I have determined, however, not to do it again until I get more results from controlled tests. I think there are real dangers, and I want more information before I risk my garden.


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# BOOK REVIEWS

**JOHNNY APPLESEED.** Man and Myth. Robert Price. 320 pages, illustrated, indexed. Indiana University Press, Bloomington, Indiana. 1954. $5

Twenty-five years is a long time to take to write a book about one man—but Johnny Appleseed is no ordinary being. In fact, he is more myth than man. The goal of the author, Professor Price, was to separate the man from the myth. This meant patient investigation, careful documentation, and the traveling of thousands of miles over the territory traversed by the hero. The book is a fine piece of work and carries the stamp of the scholar and the mark of the historian.

Whether he has succeeded in his goal, the reader must judge for himself. The background is the rough frontier and the rough people who settled there. Against this Johnny Appleseed stands out as a simple man of God with long hair, carrying his Bible and religious tracts and the seedling apple trees he raised and sold or gave away to the settlers. Barefoot, and with outlandish clothes and headgear, he traveled all over the Northwest Territories, transporting seeds of apple trees, clearing tracts of land, and creating a chain of nurseries.

Because of this he has been proclaimed the pioneer American nurseryman. This is hardly fact since nurseries were established here even before he was born—one right in his Ohio territory. He knew nothing of the art of grafting or other nursery practices save that of seeding. Nor did he know anything about selection of varieties. Though many leading apple varieties have been credited to his plantings, there are no authentic records of anything worthwhile accruing from his plantings. It must be assumed, however, that in all the hundreds of trees he raised from seed something of value must have occurred. His seeds came from the cider mills. This in itself indicates that there were already established orchards within his territory.

The chapter devoted to his religious beliefs and his missionary efforts throws considerable light on the origin of the many stories of fancy. Writers in the past have depicted him as a John the Baptist, or St. Francis of Assisi. The head of his church depicts him as an apostle of his religion who used the spreading of apple trees as a means of spreading the gospel of his faith. Thus the planting of apple trees was secondary to his missionary efforts.

Despite the excellence of this book we wonder whether Johnny Appleseed has gained or lost in stature; whether he is more of a hero as a myth. People do not like to have their myths destroyed. Any human behavior that differed from the prevailing pattern as radically as did that of our character must draw attention, especially since the man was so simple and God-fearing; performing acts of kindness where all around was harshness; friend alike to Indian and settler, respected by both and imbued with the fire of his vocation. His acts would be magnified beyond fact, and in the lonely cabins and around campfires these stories would gain in imagination until fact and fancy became so interwoven that the skein became a fashioned garment.

Presentation of cold fact will not dispel a myth. People do not want their myths destroyed. We do not want to relegate Johnny Appleseed to an historic past, keep the date of his death, and point to the spot where he is buried. This character should merge with the timeless mists that are always present; a place where his shadowy outline can just be seen. We hope that despite the brilliant work of the author to show us John Chapman the man, that we have not heard the last of the stories of Johnny Appleseed the myth.

P. J. McKenna
*Garden Consultant*
*New York City*

**OUTDOOR HAZARDS REAL AND FANCIED.** Mary V. Hood. 242 pages, illustrations by Don Perceval; indexed. Macmillan, New York. 1955. $3.95

This is a popular to semi-technical book in which the author has admirably succeeded in presenting to an audience, sixteen to sixty, the innocuous sides of most of our animal friends. Her basic premise is that knowledge and good planning can make the difference between an outdoor fiasco and a camping trip or hike which is a completely pleasant and refreshing experience.

One of the most important contributions in this very interesting little book is implied in the title, that is, it distinguishes between the "real and fancied" outdoor dangers. Mrs. Hood never laughs off real danger but prescribes effective woodlore or first-aid measures to meet the real hazards. It may come as a surprise to learn that your chances of being snakebitten are few, provided you use moderate care in the snake's home grounds, that there is no snake anywhere which makes a hoop of its body to chase people, and that the only test for poisonous mushrooms is to know infallibly the edible ones.

The scope of the book is broad and yet each group of animals and plants has, in most cases, been adequately handled. The animals are taken up in related groups with discussions of their habits, often acquitting them of age-old indictments of being hazards, and in general acquainting the reader with the animals they may encounter anywhere from the seashore to the tops of the mountains. The botanist may feel that the plants have been only superficially treated, and unfortunately this is true. Of course, most plants do not constitute a threat to the well-being of man when he is in the outdoors but neither do most animals. The author explains that the subject of botany on a countrywide scale is too broad for such a book but then, perhaps, a more appropriate title should have been chosen.

The author's lively, authoritative style of writing may often invite the reader to know more about the many animals and fewer plants encountered in these pages. This possibility is anticipated in a classified bibliography at the end of the book. A remarkably complete index (for popular writings) facilitates using the book as the manual for outdoor living that it is. It is recommended for youth counselors, scouts of both varieties, and adults not familiar with the art of living in the out-of-doors.

Richard S. Cowan

**THIS WEEK OUT OF DOORS.** A Nature Calendar. Edward E. Wildman. 202 pages, indexed. Livingston Publishing Co., Narberth, Pa. 1954. $2.75

*This Week Out of Doors* is replete with with natural phenomena that may be observed in the northeastern states during each week of the year. Generally speaking, the calendar applies to the Philadelphia-New York City region and nearby counties in Pennsylvania, New York, and New Jersey. It may be made more wide-ranging in use by advancing the season a week or two in the latitude of Washington, D. C., and retarding it two or three weeks in northern Vermont, New Hampshire, and Maine.

Though written on the elementary school level, it may be read with pleasure by an adult, and is of special help to leaders of Scout troops, 4-H groups, and nature classes.

Mr. Wildman covers such varied topics as snow crystals, evergreen trees, air pressure, magnetism, the constellations, bird migrations, soil and stones, blooming of flowers, chorusing of frogs, the habits of bees and ants, marine life, leaf coloration and cocoons.

Kindly advice is given on how youth may assist Nature and her creatures by some simply-performed and practical projects, such as construction and erection of bluebird houses, planting of trees, the destruction of tent caterpillar eggs. A list of "things to do" each month of the year is included. The suggestions range from catching snow crystals in January and observing them on a dark surface to listing the birds due to arrive the first week in May and the trees that will be changing color in October. It should be in the library of all elementary schools in the region, as well as on the book-shelf of the local naturalist.

David Fables
*Biology Department*
*Union Junior College*

**THE NEW GREENHOUSE GARDENING FOR EVERYONE.** Ernest Chabot. 252 pages, illustrated, indexed. M. Barrows, New York. 1955. $4.75

This should be a valuable addition to the book-shelf of the amateur greenhouse gardener, and all who are dreaming or planning to have a greenhouse of their own some day.

The author writes in a way that is understandable by everyone and covers the subject very thoroughly. Much thought is given to location, types of greenhouses, heating units, and equipment for greenhouse and potting shed. He speaks with real authority, for he was a greenhouse gardener for nineteen years and operated three greenhouses during that time.

The chapters on watering, shading, soils and fertilizers should save the beginner from many pitfalls. The author's cultural notes on cut flowers and potted plants are brief and to the point. This is, no doubt, where most beginners will start their adventure in greenhouse gardening.

While few beginners will want to start with orchids, they are always a great temptation to the more advanced gardener with a greenhouse, who will find this chapter helpful.

A word of caution on growing tender shrubs, vines, and vegetables in a small greenhouse—they generally take too much room. To the average home gardener, the chapter on growing plants from seeds and

cuttings should be of special interest, for so many plants can be started for use in the outside garden.

In the chapter on control of pests and diseases, the author gives a good account of the latest methods. The last chapter is a very fine calendar for greenhouse planting. It is well arranged so one can see at a glance when to sow seeds or plant bulbs. It also points out the special requirements of each subject.

STEPHEN G. CUTTING
*Ossining, New York*

**THE BOTANY OF COOK'S VOYAGES.** Elmer Drew Merrill. 383 pages, illustrations, plates; indexed. Chronica Botanica Co., Waltham, Mass.; Stechert-Hafner, Inc., New York. 1954. $4.75

Any person interested in the botany of the Pacific Basin will be at once intrigued by this title, for of the early exploratory voyages, Captain Cook's are some of the most interesting and many of the details have been clothed in mystery. Those with some acquaintance with Cook's travels know that there were difficulties with the Forsters (father and son who were the botanists on his second voyage), but few people realize the extent to which the son, "inspired, aided and abetted by his father," lifted names, descriptions, etc., from the unpublished manuscripts of Solander (who was still active). Some of the binomials and descriptions published in the younger Forster's *Prodromus,* mostly lifted from Solander, were actually credited to the latter, but many others were published with 'each new name carefully followed by the letter 'F'." "One has reason to suspect that the excerpts from all the Solander detailed descriptions had not been completed when the Forsters lost access to the Banks library and herbarium [where the Solander materials and manuscripts were stored]. The Solander *nomina nuda* so casually published by the younger Forster in his *Prodromus,* approximately fifty, and they appear—under *'Plantae obscurae.'* There was really nothing obscure about them, because of the extant specimens, the Parkinson drawings, and the greatly detailed Solander descriptions to which the Forsters no longer had access."

Besides these very interesting and instructive introductory chapters which are devoted to the subject matter suggested by the title, there is an even larger portion of the book occupied by discussions of the place of origin and the time and means of distribution of various economic plants in the Pacific Area. To this study, Dr. Merrill brings an almost unparalleled wealth of experience and thought, so that it is not surprising that he disagrees, often in a most acrimonious fashion, with various earlier, non-botanical theorizers on this subject. There is a chapter on early trade routes in the Pacific and their influence on plant distribution; one chapter in which the theories of several earlier workers (including Thor Heyerdahl) are very critically dissected and for the most part negated. Then follow three chapters on various aspects of Sydney Parkinson's (the artist on Cook's first voyage) contributions, especially on the names appearing in his journal and with his plates.

Aside from the inconsistency between the book's title and much of its content, the only real criticism lies in its organization, or rather its lack, for the reader will certainly be impressed by altogether too many repetitions of facts and conclusions and by a general disjointedness. Surely the editor and the several botanists whom Dr. Merrill reports to have read the manuscript, could have performed a genuine service to the author and to his readers by reducing the number of repetitions and by reorganizing it so that an orderly and logical sequence of ideas was presented.

RICHARD S. COWAN

**WEEDS.** Walter C. Muenscher. 560 pages, illustrated, indexed. Macmillan, New York. Second Edition 1955. $10.

The second edition of *Weeds* is a large illustrated book of merit on the many plants which grow where more useful plants are desired. Dr. Muenscher describes the characteristics and habits of a few ferns and fern allies, but devotes his major attention to the ways in which seed plants reproduce and spread. In addition to propagation by seeds, he mentions vegetative methods such as bulbs, tubers, roots, rhizomes, modified stems. He discusses the natural means of dissemination (wind, water, and animals) and the scattering of weeds through man's intervention (machinery, feeding stuffs, and agricultural seed impurities).

In this book weeds are divided according to the habitats of pasture, meadow, lawn, and garden. They are also listed as annuals, biennials, and perennials.

The control methods of cultivation given are plowing, mowing, pulling, disking, pasturing, and grazing. A helpful inclusion is information on methods of control by chemical and biological means developed since the first edition of *Weeds.* There are also lists of common weeds of medicinal value, poisonous weeds, and weeds of special locations such as cranberry bogs, rice fields, etc.

Early in the book the author tabulates the various categories of weeds. These tables omit an element of orthodox nomenclature. For example, *Agropyron repens* stands without the prescribed (L) Beauv. However, later on the customary procedure is followed.

Like recognized botanical manuals, the book contains a workable indented key by which weeds may be rather easily traced to genus and species.

The illustrations showing 331 varieties of weeds increase the book's usefulness. The well-done drawings include roots, stems, leaves, flowers, fruits, and seeds. Frequently in such books some organs of the plant are not illustrated, a serious omission to the mind of this reviewer.

The volume should prove helpful to agriculturists and gardeners as well as to the professional and amateur botanist.

JESSIE G. FISKE
*Douglass College*

**BOTANY. PRINCIPLES AND PROBLEMS.** Edmund W. Sinnott and Katherine S. Wilson. 528 pages, illustrated, indexed. McGraw - Hill, New York. Fifth edition 1955. $6.75

The fifth edition of Dean Sinnott's introductory textbook has extensive format and textual changes. The familiar McGraw-Hill cover has been abandoned in favor of a dark green one with a photographic cover illustration, a new type style and format used, and the text illustrations varied in shading. Many of Rutherford Platt's semi-microphotographs have been introduced.

The text changes tend toward a "dynamic" view of plant development in an apparent effort to enliven the presentation of elementary botany. The sections on classification have been brought more in line with current nomenclature; the dicotyledons, however, suffer by comparison, with such barbarously named or poorly defined units as Archichlamydeae, Tubiflorales, and Glumales still being presented.

As a text for the general college student whose interest in plants is latent and who has no knowledge of the place of botany in modern technology, this book should serve as stimulant.

J. J. WURDACK

**THE PRACTICE OF MODERN PERFUMERY.** Paul Jellinek. 219 pages, indexed. Translated and revised by A. J. Krajkeman. Interscience Publishers, New York. 1954. Printed in Great Britain. $4.75

Dr. Paul Jellinek has had a great deal of practical experience in the fields of cosmetic chemistry and formulation, odor research and development, and he possesses a wide knowledge of basic materials. His book is informative and interesting and constitutes a valuable text, particularly for the beginner in the perfume and cosmetic fields. What he has to say about odor recognition and matching is


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stimulating. The problems of creating finished cosmetic products are thoroughly, if somewhat briefly, treated, and basic requirements are soundly discussed. There are absorbing (perhaps controversial) chapters on the psychology of odors, their erogenic effects, and the analysis of odor "complexes." One of the most useful features of the book is the inclusion of numerous charts; among these the ones covering stability and discoloration are of special value.

Several of Dr. Jellinek's observations and suggestions must, of course, be modified to meet particular problems and demands. Thus his formulations of odor complexes, helpful as they are, should be altered to satisfy specific needs, and may also need some modernization.

One might wish that Dr. Jellinek had discussed the subject of aromatic specialties, which are so important today to cosmetic and perfume manufacturers, since they must be employed to achieve distinctive and acceptable odor notes. A compilation of these specialties, with a short description of their odor characteristics and their applications would be valuable to the student, and might save much time and energy on his part. And we would have welcomed Dr. Jellinek's comments on the allergenic action of certain raw perfume materials; irritant effects of components must be considered in many compositions. Possibly in a later edition Dr. Jellinek will discuss this subject.

GEORGE H. AMMERSBACH
*Chief Perfumer*
*Fritzsche Brothers, Inc., N. Y.*

**BRITISH MOSSES AND LIVERWORTS. E. V. Watson. 419 pages, illustrated, indexed, with foreword by Paul Richards. Cambridge University Press, New York. 1955. (Printed in Great Britain.) $8.50**

Mr. Watson presents here an approach to the study of bryophytes that has several new and original features. Of "over 600 mosses and nearly 300 liverworts" known in the British Isles, 154 of the former and 55 of the latter are described and illustrated. The keys (57 pp.) and notes extend the numbers that can be identified by means of this handy volume to 310 and 136. These include practically all of the bryopyhte flora that the beginner anywhere in the British Isles is likely to find. Of these, 182 of the species fully described and illustrated are more or less common in North America.

The Introduction (pp. 1-24) covers the structure and life cycle of these plants, how to study them, and how to collect and store them. An excellent glossary, lacking illustrations, covers pp. 25-35. Keys to fourteen "sections" of mosses and nine of liverworts are followed by keys to species in each section or subsection. A synopsis of classification and systematic list follow (pp. 93-97).

The descriptions occupy pp. 100-399, allowing about one and a half pages to a species. The text tells where the species grows and what it looks like, details of leaves and their cells, details of the sporophyte, and a paragraph entitled "Ecology." The figures take one third to one half page and include many large and accurate drawings. There are eighteen full page halftone plates from excellent photographs.

Twelve pages of lists of species by habitats, and an index to genera conclude the volume (419 pp.).

The descriptions, "written in simple readable form which will avoid all unnecessary technicalities" are intended to give "a useful overall picture of the plant." They are enriched with comparisons with related species and with species which appear to be similar. "Ecology" briefly mentions substrate, microclimate, pH relations, and associated plants. In some of these respects the British vegetation is much like the North American. In others, the differences are striking.

Many clever details for identification are given: perigonial bracts in *Philonotis;* scales on the leaf of *Sphagnum palustre.* Other readily observed characters are not mentioned: gemmae of *Aulacomnium palustre* (those of *A. androgynum* are illustrated).

Much emphasis is placed upon color, as is customary with British Bryologists. Dr. Grout was impressed with this on the forays in 1930, and advised me to give attention to it. He had little or nothing about color in his books because, he said, he had a very feeble perception of color. *Lophocolea heterophylla,* however, is described as "usually comparatively dark (not whitish) green." I "usually" recognize the plant by its whitish green color! The branches of Sphagnum are said to be "strictly in whorls," p. 36, "(in whorls)", p. 100. Dixon, Andrews and the rest of us say "in fascicles." The condition is unmistakable; by any other name it is the same. Apparently authorities differ as to whether *S. subsecundum* has one layer of hyaline cortical cells, or more than one.

A separate reprint of the keys in a pocket inside the back cover of the book is a blessing, both in the field and in the laboratory. This $8.50 book will whet the appetite of the beginner and induce him to get the reprint of Dixon's Handbook at 50/.

HENRY S. CONARD
*Dept. of Botany*
*Grinnell College*

**APPLIED ENTOMOLOGY. H. T. Fernald and Harold H. Shepard. 386 pages, illustrated, indexed. McGraw-Hill, New York. 5th edition 1955. $7**

In the 5th edition of this book, which has been held in high esteem ever since 1921 when the first edition appeared, the sections on insect control have been brought up to date. The 4th edition was published in 1942 prior to the discovery of DDT and other insecticides which have revolutionized the control of insects.

*Applied Entomology* deals, however, not only with insect control but also furnishes information on other phases of general entomology and insect classification.

The late Dr. H. T. Fernald, Professor of Entomology at the University of Massachusetts, was the author of the first three editions, co-author of the fourth, and, in spite of age and poor health, read the manuscript of the fifth edition through chapter 24. Much of the text has been rewritten by Dr. Shepard for this 5th edition.

**TWENTY-FIVE HISTORIC YEARS. Edward I. Farrington. 210 pages, illustrated, indexed. Massachusetts Horticultural Society, Boston, Mass. 1955. $3**

While this book is intended primarily for the members of the Massachusetts Horticultural Society—to stir memories among the older ones and to acquaint the younger ones with what took place during twenty-five eventful years, it makes interesting reading for many others in the gardening world. For in relating how this important horticultural organization expanded its scope and activities in this period, Mr. Farrington has brought in the many personalities who were involved in the flower shows, the growth of the library, the development of the publication "Horticulture," as well as the many who have been recipients of the various awards of this one hundred and twenty-five year old society.

**PERENNIALS. Marjorie P. Johnson. 96 pages.**
**HARDY BULBS. R. Milton Carleton. 91 pages. Both books illustrated by Rebecca and Douglas Merrilees. Rinehart's Garden Library, New York. 1955. $1.50**

Rinehart's Garden Library has added two more books to this pleasing series—*Hardy Bulbs* by R. Milton Carleton and *Perennials* by Marjorie P. Johnson.

Mr. Carleton suggests the various ways in which bulbs may be used in the garden and furnishes general cultural information. Mrs. Johnson treats fourteen popular perennials in similar manner. These little books are for the beginning gardener, the young new home owner, and they serve to introduce him to the wealth of plant material that can enliven his grounds.

**SHRUBS AND TREES FOR THE SMALL PLACE. P. J. Van Melle. 246 pages, illustrated, indexed. Revised edition edited by Montague Free. Doubleday, Garden City, N. Y. 1955. $3**

At the time of his death in December 1953, Mr. Van Melle had almost completed the revision of this book originally published in 1943. The publisher and his widow prevailed upon Mr. Free to finish


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the task. As Mr. Free points out in his foreword, Mr. Van Melle "had a forceful personality and strongly held opinions which are reflected in this book," but those who knew Mr. Van Melle—even though they did not always agree with him—recognize his opinions were based on personal observation and personal experience. The book is a worthy addition to a gardener's library.

**AN INTRODUCTION TO NATURE.** John Kieran. 223 pages, illustrated in full color by Don Eckelberry; Tabea Hofmann; Michael H. Bevans. Hanover House, Garden City, N. Y. 1955. $6

John Kieran's three books — *An Introduction to Birds, An Introduction to Wild Flowers, An Introduction to Trees*—have been combined into one volume. Three noted artists have done the illustrations—Don Eckelberry the birds, Tabea Hofmann the wild flowers, and Michael H. Bevans the trees—and altogether this is a very attractive, interesting work. The indexes from the three previous books have been combined into one alphabetical listing.

**GARDENING HANDBOOK.** Thomas H. Everett. 144 pages, illustrated, indexed. Arco Publishing Co., New York. New and Revised Edition 1955. $2

T. H. Everett's popular book, of which thousands of copies have been sold, reappeared this summer in revised edition, with a new chapter on "New Chemical Aids."

Any troubled gardener should find the solution to his problem in the fact-filled pages of this instructive book.

**CHEMISTRY OF THE PESTICIDES.** Donald E. H. Frear. 469 pages, illustrated, indexed. D. Van Nostrand, New York. Third edition 1955. $8

Dr. Frear of Pennsylvania State University has completely revised and largely rewritten his highly useful book. The present edition includes a discussion of the many new insecticides, fungicides and herbicides developed in the last seven years, and for the first time, a discussion of rodenticides as well. It is less technical than earlier editions and hence is more understandable and usable to non-technical readers. To satisfy his technical followers, however, Dr. Frear lists the appropriate analytical methods along with the discussion of the individual pesticides. In my opinion, this edition is easily Dr. Frear's best.

P. P. PIRONE

**THE CHEMISTRY OF LIVING CELLS.** Helen R. Downes. 549 pages, illustrated, indexed. Harper & Bros., New York. 1955. $7.50

Dr. Helen R. Downes, Professor of Chemistry at Barnard College, has written a new text in general biochemistry specifically designed for the undergraduate biology major rather than for biochemists. The book is fresh, expertly written and printed, with numerous clear illustrations. The physical-chemistry necessary for any adequate understanding of biochemistry is well organized and presented in a gratifyingly accurate manner. The inclusion of many recent advances in this rapidly changing field is very welcome. The inclusion of thumb-nail sketches of prominent biochemists and the generally excellent selection of original papers for interested students are to be commended.

One could question the procedure of separating so sharply the sections devoted to the organic constituents of cells from those portions of the book dealing with the intermediary metabolism of the particular class of compounds. An integrated approach to lipids, carbohydrates, etc., might have been more forceful in illustrating the direct relationship between the organic chemistry of a compound and its metabolic role. The practice, so widely used, of separating animal and plant intermediary metabolism is, unfortunately, followed in this otherwise excellent textbook.

RICHARD M. KLEIN

RECENT ACQUISITIONS to the Library

Burton, Maurice. *Living Fossils* New York, Thames and Hudson, 1954. $5.00.

Collings, G. H. *Commercial Fertilizers; Their Sources and Use;* 5th ed. New York, McGraw-Hill Co., 1955. $5 00.

Colum, Padraic. *The Vegetable Kingdom.* Bloomington, Ind., Indiana Univ. Press, 1954. $2.75.

Coombes, R. H. *Soil Warming by Electricity.* New York, Philosophical Library, 1955. $4.75.

Downer, Mary L. and Bloch, Lucienne. *The Flower.* Young Scott Books, 1955. $1.75.

Eigsti, O. J. and Dustin, Pierre, Jr. *Colchicine—in Agriculture, Medicine, Biology, and Chemistry.* Ames, Ia., Iowa State College Press, 1955. $5.00.

Franklin, T. B. *Climates in Miniature; a Study of Microclimate and Environment.* New York, Philosophical Library, 1955. $3.75.

Gunther, F. A. and Blinn, R. C. *Analysis of Insecticides and Acaricides.* Vol. 6. New York, Interscience Publishers, 1955. $14.00.

*Home Gardening Encyclopaedia;* new ed. New York, Philosophical Library, 1955. $6.00.

Howie, J. W. and O'Hea, A. J., eds. *Mechanisms of Microbial Pathogenicity.* Fifth Symposium of the Society for General Microbiology. New York, Cambridge Univ. Press, 1955. $5.00.

Hubbard, C. E. *Grasses; a Guide to Their Structure, Identification, Uses, and Distribution in the British Isles.* Baltimore, Penguin Books, 1954. $.85.

Janes, E. R. *The Vegetable Garden.* Baltimore, Penguin Books, 1954. $.65.

Knott, James E. *Vegetable Growing;* 5th ed. Philadelphia, Lea and Febiger, 1955. $5.00.

McAnally, Arthur and Roller, Duane H. D., comps. *A Check List of the E. DeGolyer Collection in the History of Science and Technology,* as of August 1, 1954. Norman, Okla., Univ. of Oklahoma Press, 1954. $3.00.

MacDowell, Claire L. *Two Ears of Corn.* Stonington, Conn., Pequot Press, 1955. $5.00.

Marshall, Roy E. *Cherries and Cherry Products.* New York, Interscience Publishers, 1954. $8.50.

Nord, F. F., ed. *Advances in Enzymology.* Vol. 16. New York, Interscience Publishers, 1955. $11.00.

*Pilot Plant Techniques of Submerged Fermentation.* Rendiconti Instituto Superiore di Sanita, Vol. 17; special English ed. New York, Interscience Publishers, 1954. $8.10.

Pohl, Richard W. *How to Know the Grasses.* Dubuque, Ia., Wm. C. Brown

(Continued on page 204)

# *NEWS, NOTES and COMMENTS*

**Downtown Lecture Series, 1956.** The Downtown Lecture Series, sponsored by the Volunteer Associates of The New York Botanical Garden, will be held during the month of January 1956 on four successive Thursdays. On January 5, Miss Alice Chauncey will give an illustrated talk on "English Gardens, Large and Small"; on January 12, Raymond D. Wood, an illustrated talk on wild flowers, title to be announced later, on January 19, Mrs. Oakley Sheldon on "A New Garden for an Old House;" on January 26, Dr. P. P. Pirone, Plant Pathologist of the Garden, on "What's New in Gardening."

The lectures will be held at 11 o'clock in the Auditorium of the French Institute Building, 22 E. 60th St. Invitations will be mailed shortly, and further information may be had from the downtown office of The New York Botanical Garden, 22 E. 60th St., PLaza 3-8462.

Mrs. Sheldon is Chairman of the Committee on Arrangements. Among those assisting are Mrs. John D. Beals, Jr., Mrs. James C. Brady, Mrs. Jonathan S. Butler, Mrs. Charles Doscher, Mrs. Percy Douglas, Mrs. Benjamin S. Few, Mrs. Barren Lefferts, Mrs. Madison Lewis, Mrs. John E. Lockwood, Mrs. Clifford D. Mallory, Mrs. Harold Ruckman Mixsell, Mrs. Hermann G. Place, Mrs. Donald Scott, Mrs. Charles G. Stradella, Mrs. John G. Winchester.

**Memorial Rooms in Research-Laboratory Building.** Provision has been made for Memorial Rooms in the Research-Laboratory Building of The New York Botanical Garden, which is now under construction. The Advisory Council and the Volunteer Associates of The New York Botanical Garden have subscribed to several of these rooms; also the Union Carbide and Carbon Corporation to a room in memory of William Felton Barrett; Clarence Lewis to a room in memory of Annah Ripley Lewis; Senator Thomas C. Desmond to a room in memory of Liberty Hyde Bailey; Mrs. Hermann G. Place to a room in memory of John Bassett Moore; Mrs. Richard de Wolfe Brixey to a room in memory of Richard de Wolfe Brixey; Mr. and Mrs. Huntington McLane to a room in memory of Mrs. Oakleigh Thorne; Mrs. Alexander Pinney, Mrs. T. Kelvin Evans, and Mrs. J. de Ganahl to a room in memory of Mrs. Jerome B. Coombs.

**Theater Benefits.** Two theater benefits will be sponsored by the Volunteer Associates of The New York Botanical Garden:

November 30, 1955. "Janus," starring Margaret Sullavan, Robert Preston and Claude Dauphin, on November 30, 1955. Orchestra and mezzanine seats only; prices range from $25 to $7.50.

February 7, 1956. "Pipe Dream," new Rogers and Hammerstein musical, starring Helen Traubel and Bill Johnson. Orchestra and mezzanine seats only. Prices range from $27.50 to $7.50.

Reservations may be made at the down-

(Continued on page 204)

## LET THERE BE HERBS

There is something about a new book that is like a Christmas present. You look at it with anticipation but often have to put it aside until a more leisurely hour to open it and savor the contents. When you take it up again, after the first inspection you may or may not get full satisfaction of all your expectations. Christmas toys were always that way to me as a child. On the morning after the great day, I would rediscover them with a pleasant sense of their beng made for me. Of all the things I may have thought I wanted for Christmas, the books I received were in the end the greatest joy. A book which has been published by Cornell University Press this fall, entitled *Garden Spice and Wild Pot-Herbs,* would make a handsome gift to any gardener and one which would remain a delight forever.

The story of its publication goes back a year or more. It was first born as a limited edition entirely hand-set and hand printed by the illustrator Elfriede Abbe, artist of the Bailey Hortorium. Professor W. C. Muenscher of Cornell University has collaborated with Myron A. Rice on the text which is a scholarly presentation of the subject, giving descriptions of the plants with mention of what parts are used in cooking and what parts for propagation. Primarily this volume is a work of art. Miss Abbe has done fifty - six full - page wood engravings, plus a marvelous fold-out spread of the seeds of fourteen different plant families.

We were in correspondence with Miss Abbe while she was creating this book. The press on which she printed the first edition, which sold for sixteen dollars a copy and was quickly snapped up by bibliophiles, stands in her cellar. The lovely old type which she set by hand gives the book a dignity worthy of the subject which has not been treated similarly since the great English herbals. But for the marvels of modern photo - lithographic processes, such a labor of love would not have been practical for one individual in her spare time. However, the Cornell University Press has them exactly to make a book of the same size as the original to sell at a popular price. By means of the most ancient methods of printing and modern high-speed lithography, a beautiful and useful book has been made available to all gardeners.

Professor Muenscher is the author of several other well-known books, such as *Poisonous Plants of the United States, Weeds,* and *Aquatic Plants of the Uuited States.* The first two are standard reference works on the subject and have been revised and reprinted recently. He retired from active participation in the faculty at Cornell University last year, but he still carries on a large correspondence and contributes to magazines from time to time.

To anyone who collects herbs, *Garden Spice and Wild Pot-Herbs* is a source of delight and stimulation. Some of the rarer species are described and pictured such as turnip-rooted chervil, *Chaerophyllum bulbosum,* and cumin, *Cuminum Cyminum.* They are herbs which every fancier will try once and often decide are not worth perpetuating, but pictures of them have been quite unobtainable up to now. The wild pot-herbs include many which will challenge the road-side botanist. It would be well to have a copy of Dr. Muenscher's *Poisonous Plants of the United States* at hand before trying any but the herbs pictured by Miss Abbe for greens.

If we were Santa Claus, we would see that *Garden Spice and Wild Pot-Herbs* went to every gardener in the land. The achievement of an individual in proving that a work of art is not impossible in this day and age should be heralded by all who love fine printing and beautiful books. Despite the magnitude of the names of the authors, the artist, designer and original printer of the book deserves the laurel wreath.

GERTRUDE B. FOSTER

**NEWS, NOTES** (from page 203)

town office of The New York Botanical Garden, 22 E. 60th Street, New York 22, or by calling PLaza 3-8462.

**Staff Members in Venezuela.** Dr. John Wurdack, assistant curator, and Joseph Monachino, Associate Custodian of The New York Botanical Garden, have been in Venezuela since September. They spent the first month conducting a vegetational survey in the northeastern part of the country. During October and this month, November, they have been engaged in collecting for the Garden in a region south of the Middle Orinoco River.

**Drs. Rickett and Rogers Officers of International Committees.** Dr. H. W. Rickett, Bibliographer of The New York Botanical Garden, has recently been appointed Secretary of the Special Committee for Phanerogams; Dr. Donald P. Rogers, Curator of The New York Botanical Garden, served for several years as Secretary of the Special Committee for Fungi, then in 1954 was appointed secretary of the combined Special Committee on Fungi and Lichens. These are international committees charged with reporting to the next International Botanical Congress on questions of nomenclature. The Special Committee for Phanerogams is concerned with conservation—pertaining to the flowering plants and gymnosperms; the Special Committee for Fungi and Lichens with the nomenclature of fungi and lichens.

**Brazilian Official Studying at Garden.** Alcides Rubeiro Teixeira, Chief of the Section of Phytopathology, Instituto de Botanica, Sao Paulo, Brazil, is pursuing studies at The New York Botanical Garden following six months of study at the University of Cambridge, England, under a 1955 Guggenheim Inter - American and Philippine Fellowship.

**International Flower Show, 1956.** W. R. Coe, Jr., Chairman of the Board of Directors of International Flower Show, Inc., recently announced that the International Flower Show will be held March 11-17, 1956, in the former John Wanamaker department store. Three of the five lower floors of the south building, now available as an exhibition palace, will be used. This will provide about thirty thousand square feet of space more than at the Grand Central Palace. Richard B. Farnham, executive secretary of the Horticultural Society of New York, will be the executive director of the International Flower Show, and Alfred Reoch, will be the manager of the show.

The New York Botanical Garden is planning to exhibit a garden of annuals. T. H. Everett, Curator of Education and Horticulturist of the Garden, is responsible for the exhibit, while Louis P. Politi, Head Gardener, and his staff of gardeners will be busily engaged in raising the great amount of plant material such an exhibit requires.

**Mettler's Woods Saved.** Preservation of Mettler's Woods, sixty-five acres of primeval forest near New Brunswick, New Jersey, as a center for woodland research has been assured. The United Brotherhood of Carpenters and Joiners of America, A.F.L., contributed $75,000, adding to the already collected $50,000 to meet the required $125,000 purchase price. The Nature Conservancy in Washington, D.C., donated $20,000. The tract will be turned over to Rutgers U. as a permanent memorial to W. L. Hutchison, former president of the above labor union who died in 1953.

**Garden Club of America Founders' Fund Award.** At its forty-third annual meeting, held in Texas, March 1955, the Garden Club of America selected the planting on the close of the Washington Cathedral as the project to receive the Founders' Fund award this year. This is the cathedral whose Bishop's Garden is described in this number of The Garden Journal.

**Fall Garden Show.** For the first time since its founding in 1924, the Federated Garden Club of New York State, Inc., held a fall show in conjunction with the thirty-second annual Women's International Exposition, November 7-13, New York City. Mrs. William Stickles, of Malba, L.I., who has given flower arrangement courses at The New York Botanical Garden, was general chairman.

**Errata.** Two errors occurred inadvertently in the September-October 1955 number of The Garden Journal. The front cover illustration of that number is a wood cut from the *Kreuterbüch,* Strassburg, 1556, by Hieronymus Bock. The illustration top right, pg. 162, is *Viburnum prunifolium.*

**BOOK REVIEWS** (from page 203)

Co., 1954. $2.75 (cloth bound); $2.00 (paper bound).

Reed, Clarence A. and Davidson, John. *The Improved Nut Trees of North America and How to Grow Them.* New York, Devin-Adair Co., 1954. $6.00.

Walton, John. *An Introduction to the Study of Fossil Plants;* 2d ed. London, Adam and Charles Black, 1953. $4.75.

Wilkinson, B. E. and Tiedjens, Victor A. *The Handy Book of Gardening.* N. Y. The New American Library, 1955, $.35.

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**To reach the Botanical Garden,** take the Independent Subway to Bedford Park Boulevard station, use the Bedford Park Boulevard exit and walk east. Or take the Third Avenue Elevated to the 200th Street station; the New York Central to the Botanical Garden station; or the Webster Avenue Bus No. 41 to Bedford Park Boulevard.

# Wayside Gardens

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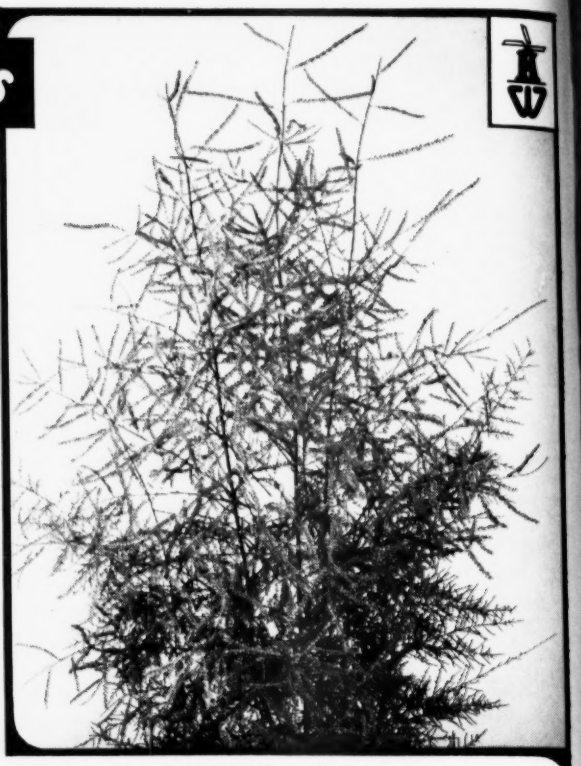

New TAMARIX, *Pink Cascade*

*New* **Tamarix, *Pink Cascade.*** A truly elegant new introduction whose beauty and airy charm will add distinction to any garden. Blooming from July until September, this handsome shrub produces masses of cascading panicles of flesh-pink flowers that are carried well above the rich, blue-green foliage.

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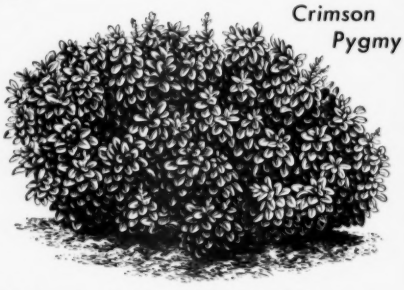

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**Fragrant Snowball, *Viburnum, Carlcephalum.*** Finest flowering shrub developed in 50 years. Originated in England and introduced *exclusively* by Wayside. Large 6" clusters of very fragrant white flowers bloom lavishly on graceful 6 ft. plants. Of easy culture, hardy at below zero temperatures. Plant Pat. #776.

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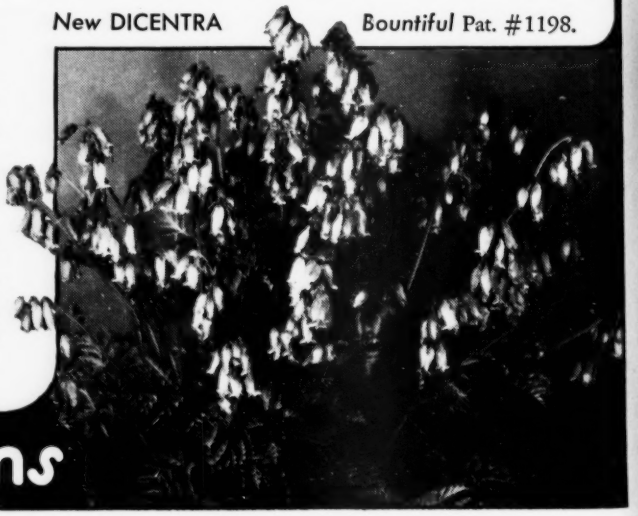
New DICENTRA *Bountiful* Pat. #1198.



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